

**Ukrainian Bank Accounting and Operations
Infrastructure Development Project
for the
NATIONAL BANK OF UKRAINE**

QUARTERLY PERFORMANCE REPORT

Quarter Ending September 30, 2000

USAID CONTRACT EPE-I-00-95-00056-00
Task Order #OUT-EPE-I-804-95-00056-00

Submitted to:

United States Agency for International Development
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**Quarterly Performance Report
For
International Business & Technical Consultants, Inc.
Contract #: EPE-I-00-95-00056-00
For the period July 1, 2000 to September 30, 2000**

A. CONTRACTORS REPORT -- NARRATIVE

1. Background:

USAID has been providing technical assistance to the National Bank of Ukraine (NBU) since April 1995, to help strengthen its capacity to regulate and supervise the banking sector. The primary focus of the program has been to help the Bank Supervision Department (BSD) build up the primary components of prudential regulation; on and off-site examination, problem bank resolution, and legal underpinnings. This program, however, would have reached an impasse unless the Ukrainian banking system converted to international accounting standards (IAS). There is no way that either the National Bank of Ukraine or the general public can get an accurate picture of the financial conditions of the banks unless the IAS system is adopted. The Gosplan accounting system previously in use was designed for a time when the so-called banks served not as allocators of financial resources to the most efficient uses based upon price, but were a funnel of centrally planned financial allocations. In such a system, risk and credit analysis had no role and the accounting system reflected this. Therefore, it was critical that this conversion to IAS was made as soon as possible.

The Governor of the NBU had asked that USAID to broaden its program to include particular emphasis on the implementation stage of the development of international accounting standards in the commercial banks. Bank supervision and internationally accepted accounting conventions are interrelated priorities in building a market-oriented private banking sector. Conversion to IAS was one of the most important conditions in the World Bank's Financial Sector Adjustment Loan. The implementation of IAS in the Ukrainian commercial banks is a large undertaking and AID has been joined by EU/TACIS and the British Know How Fund in this program.

The National Bank of Ukraine has issued in 1997, an accounting chart for commercial banks and instructions on the new accounts, based on IAS and existing requirements set up by the supervision and statistics sections of the NBU. These documents were used as guidelines by commercial banks during the implementation phase that began in October 1997. Use of the new chart of accounts and revised reporting were mandatory for all commercial banks beginning January 1, 1998.

The ongoing project was divided into two components: to provide technical assistance to a group of Pilot Banks (PIBs) and to advise Participating Banks (PABs) in their conversion process. The final objective of the first component was to provide technical assistance to a group of PIBs so

that they would have accomplished a rapid and correct transition from the existing, Soviet-based accounting system to a new accounting system which would be in substantial compliance with international accounting standards (IAS). In addition, the technical assistance should be directed to ensure that PIB management comprehends and uses correctly the IAS data produced from the new system. The second component is to assist as many Ukrainian banks as possible, the PABs, with an analysis and approval of their conversion keys from the existing system to an IAS-based system, to advise on the use of IAS valuation and recognition rules for implementation beginning January 1, 1998, and assist in the development of possible management information systems which can be prepared from the new system. The initial project was completed on September 30, 1998 and was then extended for an additional two years. In September 1999, the project was modified effective October 1, 1999, to support additional bank restructuring initiatives through December 2000. Reporting on the project objectives, technical approach and planned benchmarks on the modified project begins in this quarterly report.

2. Expected Results:

The Task Order (TO) helps to fulfill the strategic objective of developing a more competitive and market-responsive private financial sector, and most specifically, to develop the financial infrastructure. The specific objectives are to assist the National Bank of Ukraine (NBU) in converting the commercial banks to international accounting standards (IAS) and to assist the commercial banks in upgrading their "back office" functions. The specific results expected are to achieve a transactions level conversion to IAS for banks covering at least two-thirds of the total assets of the banking system and, with a select group of banks, strengthen back office functions, such as internal audit, financial management, and fundamental systems.

The project components were restructured during the first quarter in collaboration with USAID and NBU. As of December 31, 1998, the project was divided into three components. The first component was to provide extensive in-bank technical assistance to a large bank in the system (the pilot bank-PIB). This bank was selected from the top ten banks in Ukraine and its viability is important to systemic stability.

The second component was the provision of in-bank technical assistance of lesser intensity to a group of medium-sized banks, the Partner Bank group (PAR). Collectively, the PAR group was significant to the banking system and, individually, the banks selected had the capability to provide leadership in the reform process to the rest of the banking system.

The third component was conducted jointly with the advisory team from EU/TACIS and focused on delivering a series of workshops to the Participating Bank group (PAB). This group, estimated at approximately 30 banks, was selected from the list of banks meeting NBU requirements. The workshops were directed to senior bank management and supervisory support staff and focused on the practical implementation of bank financial reporting and operational reforms using tested methodology from work in the PIB and PARs.

With the beginning of bank restructuring programs and the end of the EU/TACIS bank accounting project and related cooperative efforts, the project was again modified in September 1999, to support bank restructuring efforts and extend Kiev-based training programs on IAS and Internal Audit implementation tools into the regions. The training programs focus, in part, on the in-bank use of the Bank Management Reporting System (BMRS), the financial reporting software developed by the project in 1998. The project modifications included an extension through December 2000.

3. Current Core Activity:

The core activity for this quarter continued on implementation of the two major components of the project as set forth in the June 1999 Strategic Work Plan (SWP): The Pilot Bank Program (PIB) and the Sector-wide Dissemination of IAS Implementation Tools (Dissemination Program). As indicated above, these components were modified and redefined beginning October 1, 1999.

Specific activities performed during the quarter within the PIB were as follows:

- With technical support from short-term IT advisor, assisted Aval in the development of automated maturity gap and interest sensitivity gap reports for use by ALCO, conducted a diagnostic on Aval's customer deposit and plastic card payments systems, and developed an internal audit program, procedures, and supporting software for audit of plastic card operations.
- In coordination with the Aval Bank Restructure Project, began planning IT assistance in the development of credit reporting systems.
- Assisted the internal audit department at Aval in preparing detail components of its internal audit manual for risk assessment methodology, branch audit procedures, and audit of deposits.
- Assisted Ukrsibbank in Kharkiv in re-defining the technical assistance goals agreed upon for year 2000.

Specific activities performed during the quarter within the Dissemination Program were as follows:

- Delivered the BMRS-Basic and Internal Audit Case Study courses in regional bank training centers in Kharkiv and Lviv.
- Completed development of the BMRS-Advanced course and scheduled October delivery of the course in Kiev and Lviv.
- Maintained the project website with current information, including revised versions of BMRS.

4. Performance (June 1999 SWP):

Benchmarks for Quarter Four (September 30, 2000):

- *At Aval Bank implementation of the MIS development plan will be well in progress on at least one sub-system to be specified in the workplan which promote bank restructuring objectives (for example the policies and procedures for a redesigned credit administration).*

As described in the June 30, 2000 quarterly report, problems came up in the new data base implementation and conversion at the head office and performance against the strategic plan was delayed. Aval management was aware of the slippage and took action to correct the situation. They made the decision to develop the enhanced applications in-house using Aval IT staff instead of leaving that task with IBIS as originally planned. In that way, we were advised that IBIS could increase the resources allocated to continuing data base development and conversion. We were also advised that the first set of applications (Dealing, client bank, general ledger functions, operating day, and basic financial reports) have been converted to run against the new data base system and that field testing of these applications was begun in the Chernigiv branch.

The short-term IT advisors that were working with Aval during the quarter in evaluating the new deposit and plastic card application system and developing the gap management reports confirmed that the slippage in implementing the IT strategic plan continued into the present quarter. Contrary to what we were told in June, the new database is not populated with data and is not being used by Aval even though its design was completed in the spring. Therefore, the automated maturity and interest sensitivity gap reports had to be based on the limited data that could be extracted from the old database.

The IT advisor evaluating the new customer deposit/plastic card application system being developed in-house, which is called "Robin", spent two days in Chernigiv where the new application system is being field tested. His conclusion from that evaluation was that Robin was a very elementary branch banking system that lacked basic customer and deposit functionality. The advisor also raised general concern on the overall process and documentation standards in the in-house development effort. His report on this system is attached as Exhibit V.

As stated in the June 30 quarterly report, a fundamental assumption of the strategic plan was that IBIS would develop new application systems and that no significant development would be undertaken in-house. The review of the test site results this quarter indicated that Aval does not have the resources in-house to effectively design a modern customer deposit system. It is also likely that this same limitation would apply to the other application systems originally projected for development by IBIS this year.

The IT advisor who assisted Aval in the development of the IT Strategic Plan returns to Ukraine in October for a final evaluation of progress on the original plan and recommendations on actions which should be taken by Aval to proceed with effective implementation.

- *Aval bank will have completed the revision of its accounting policies and procedures at the home office and such revised polices and procedures will be in substantial compliance with IAS.*

In September, Aval completed the fourth and final (for year 2000) revision of its complete set of technological cards (TC) which represent the banks formal accounting policies and procedures. We had reviewed key drafts of TCs during the year and our comments were incorporated into the final version. The TCs, as revised, are in substantial compliance with IAS. However, the final TC manual does not contain certain TCs that would be needed for Aval to have fully compliant IAS financial records and reporting. In all cases the omitted TCs are in areas where the NBU has not yet issued instruction. Examples of such areas are consolidation, deferred tax accounting, and recognition and measurement of financial instruments (IAS 39).

In addition, we had previously noted that the general process of preparing TCs was making the task more difficult and that our memorandums on the specific TCs reviewed were repeating many of the same basic deficiencies. Accordingly, we prepared a model TC for management to consider in preparing TCs in the future. Aval's methodology department prepared one TC using many of our recommended changes to the content and format. The revised, "model" TC was given to us late in the quarter further review and discussion. We are optimistic that many of the features in the model TC will be adopted in future TC revisions. A copy of the model TC using interest accrual as an example is attached as Exhibit I.

- *Aval bank will have completed a majority of the internal audits scheduled for the first six months of 2000 and these audits will have been performed in compliance with ISLA. There will be evidence that management is implementing corrections in response to audit deficiencies.*

For the most part Aval Bank has followed its audit schedule for the first six months of 2000. For branch audits, only one branch audit was delayed by one week. Two head office audits were not completed. The audit of "Transactions with Funds Raised at and Placed with the Interbank Market" was cancelled and replaced with another urgent audit request by management and the audit of "export-import Transactions, Settlements via Documentary LC's" was delayed due to illness. The head office audit department stills follows Aval's previous system and has not fully adopted international standards of internal auditing to their auditing procedures. However, based on our prior audit training at Aval, some improvements have been adopted. Sampling is now used in some cases, the department is preparing more detailed audit programs, and flow charting of procedures is being attempted.

The branch "pilot" audit, which was done under our supervision, was only completed at the end of June so did not yet have an effect on the branch audit methodology for the first half of the year. However, we noted that subsequent branch audits are much closer to international standards of internal auditing. Significantly, improvements were noted in documenting the review of internal controls and in distinguishing between the roles of the internal auditor, external auditor, and the 'revision' function. It is now the branch audit section's current practice to review the flowcharts that were drawn up in the pilot audit and to complete the internal control questionnaires. Although, the audit programs are sometimes not followed in their entirety due to the extra time required, much more detailed instructions are now given by the supervisors to their staff. Unfortunately, although everyone agreed that the pilot audit documentation was much better, the current documentation procedures have not changed significantly, again probably due

to the extra time required. There is a good chance that this latter point will be rectified when the external auditors start to review the internal auditor's working papers.

Aval does have a very strict system of follow-up on audit findings. Upper management is involved and management of the audited department is expected to respond promptly to the internal audit's management explaining in writing what steps it has taken to correct deficiencies noted. If necessary, the audit department performs a follow-up review.

- *Aval will have adjusted its financial records to comply with the audited external financial statements issued as of December 31, 1999.*

Senior management of Aval made the decision not to adjust its financial records to comply with the "Big 5" external audit report and not to publish IAS-compliant financial statements, which would differ from those previously presented to its shareholders and NBU. Accordingly, the financial records of the bank, the reports to NBU and financial information furnished to shareholders and the Ukrainian public do not comply with IAS. Early in the year, management had agreed to do this and it was part of Aval's commitment letter to NBU. Therefore, we had included full IAS compliance as a key benchmark for this quarter.

Management's reasons for not making these adjustments were: (a) NBU did not provide instructions on how these adjustments were to be reported, (b) there was no agreement on the period of time that resulting capital shortfalls could be recovered, and (c) the adverse client reaction and public opinion could jeopardize the bank's market position and liquidity.

There is justification for management's decision in this regard. A major directive issued by NBU this year was the requirement to publish financial reports by July 1 accompanied by the auditors' report. The initial draft of the directive required that the audit report be from an "internationally recognized" firm. However, that requirement was challenged and was not in the final directive. The banking sector was effectively "off the hook" on its IAS reporting obligation. Therefore Aval and, from our observation, probably most other banks accompanied their published financial statements with a local, statutory audit report which was not IAS-based. NBU did not achieve the sector-wide compliance for the IAS-compliant reporting that would be needed to protect the individual banks reporting adjusted results. A memo from Aval management on the IAS adjustment issue is attached as Exhibit II.

- *A third training facility will be identified and have completed the training the trainer program for the two core implementation workshops and be capable of delivering these courses on a sustained basis.*

By the end of September, three bank training institutes had completed the training the trainer program for the two core courses, BMRS-Basic and the Internal Audit Case Study course. The National Center for Training Bank Personnel (NCTBP) in Kiev completed the program last quarter, and, as reported in our quarterly report for that period, we were not confident then that the center had developed the trainer capability to continue delivery. However, they have been furnished soft and hard copies of all the course material and related software. They also maintain

an aggressive training program for bankers and, although the project's specific training courses are not currently offered, components of these courses are included in the NCTPB's programs.

As set-forth in our quarterly report as of June 30, preliminary arrangements were made with the Banking College in Lviv to be the third training facility for the two core courses. The Banking College there includes a separate Banking Institute supported by NBU to advance training programs for bank employees. Therefore, it can provide both the permanent faculty and computer lab necessary to establish a sustainable program.

In September, both the BMRS-Basic and the Internal Audit Case Study courses were delivered at the Lviv center. The Banking College furnished two faculty members to be assistant trainers in the course and a full set of course materials and related software were provided to allow for incorporation of the courses into the curriculum for both the Institute and Banking College.

In Kharkiv, which had been identified as the region for our second training center, we had previously delivered our core courses at the International Consulting Center (ICC) and the Banking Department of the National Economic University. However, neither of these centers offered the resources for a sustained program. In June, we were introduced to the Banking College and affiliated Bank Training Center which, like Lviv, is supported by the NBU and trains employees in the banking sector. Also like Lviv, the Banking College has both NBU backing and a permanent faculty to support a sustainable program.

The BMRS-Basic course was delivered in July at the Kharkiv Bank Training Center and the Internal Audit Case Study Course was delivered in September. The BMRS-Basic course was delivered by a "second team" of trainers from the project so in the future we would have the capability to deliver courses in the regions simultaneously. Assistant trainers were provided from the College faculty and the course materials and related software were given to the Institute for follow-up training.

As part of our program to expand the dissemination of the core courses, BMRS-Basic and Internal Audit Case Study, at the request of the regional NBU in Odessa, we delivered both courses in Odessa during July. Participants in the courses included representations from commercial banks as well as the regional NBU and the National Economic University. The training facility used was provided by IBIS, the Odessa-based software supplier for Aval. Unfortunately, we were not been able to locate a training center in Odessa that had the computer laboratory and staff capable of delivering these courses on a sustained basis. However, the Odessa participants and NBU were very interested in the courses and appreciative of the opportunity to participate in the training in their region.

- *The BMRS--Advanced Workshop will be developed.*

Development of the BMRS Advanced Workshop was completed concurrent with finalization of the management reporting enhancements to the revised BMRS software program ("Storm"). The concept of the workshop was discussed with staff of the bank training centers in Kiev (NCTBP), Kharkiv and Lviv and course offerings were tentatively scheduled in Kiev and Lviv for October.

The course is linked to two key components of the sector-wide dissemination program, the training program itself and making available, through internet and in-bank visits, enhanced software for preparation of IAS-compatible financial and management reports. We have observed that, even three years into the IAS-based accounting reform process, the banks are still not preparing suitable, IAS-compatible internal financial and management reports and there is no software product that is readily available to Ukrainian banks for this purpose. Accordingly, with the encouragement of NBU, other bank advisors, and the BMRS-Basic course participants, we devoted significant resources to the development of BMRS-Advanced and the dissemination program.

A copy of the course description and schedule and student outline is attached as Exhibit III.

- *The NCTBP will have completed the trainer program for BMRS Advanced and be capable of delivering the two core implementation courses and the advanced course.*

As of the end of the quarter the BMRS-Advanced course had not yet been delivered at the NCTBP. However, as stated in prior quarterly reports, we do not believe that center devoted the resources necessary to deliver the two core courses on a sustained basis. Therefore, we are not optimistic that a train the trainer program at the NCTBP for the BMRS-Advanced course would be successful.

As an alternative to using the NCTBP as the primary center for developing qualified trainers to sustain the project's bank training programs, we have focused on the regional training centers in Kharkiv and Lviv. In addition, as of the end of the quarter we are exploring other organizations that may be interested in taking responsibility for maintaining all the projects dissemination and training tools, software, website content, training materials. Organizations contacted, in addition to the training centers, include the Ukrainian Bankers Association, International Management Institute, and NBU's training center in Kiev.

- *Follow-up advisory services and/or site visits will be conducted by the project instructor and training assistant for a majority of the banks represented in the course delivered by the project advisor at the regional center.*

As stated in previous quarterly reports there has been no demand for in-bank follow-up advisory services. The availability of these services is offered during the course and subsequent to the course through follow up letters and phone calls. We plan to conduct a survey of the participants during October in an attempt to evaluate how much of the course materials are actually being used in the banks. All the course offerings received excellent ratings from the participants. But, the courses are specifically designed to provide tools that are immediately usable to improve procedures. Therefore, the level of implementation impacts the long-term effectiveness of the training program.

- *Summary of progress on related project activities during the quarter:*
- A. The work at Aval during the quarter included supporting three IT assistance programs being conducted by three short-term advisors. These programs, which were designed to support both the accounting/auditing advisory work and the objectives of the bank restructuring project, are summarized below:
- An IT specialist in internal audit and automating internal audit procedures developed the audit program and related software to support the internal audit of plastic card operations. This work also included the preparation of the entire section of Aval's internal audit manual covering the plastic card area. Copies of the outline of the advisor's report and executive summary together with a soft copy of the entire report are attached as Exhibit IV.
 - A second IT advisor performed a diagnostic of Aval's Bank Customer Deposit and Plastic Card Payment Systems. As indicated earlier in this report, the advisor's work included a visit to the Chernirhiv Branch where Aval's newly developed deposit system, "Robin", is being tested. A copy of the Executive Summary from the advisor's report and a soft copy of the entire report are attached as Exhibit V.
 - A third IT advisor assisted Aval in implementing automated maturity gap and interest sensitivity gap reports. The team assigned from Aval to assist the advisor was excellent and included the Aval IT specialist that developed the program to prepare the NBU data file used for the regulatory maturity gap report. A proto-type of the initial maturity gap report and a description of how it links to the interest sensitivity gap report was discussed in a meeting of the bank's Asset Liability Committee (ALCO) in late September. A copy of the Summary of Findings from the report together with a soft copy of the entire report are attached as Exhibit VI.
- B. On July, the advisor team visited Ukrsibbank in Kharkiv as part of the regular monthly follow-up on our technical assistance program there. Ukrsibbank continues to lag behind on the year 2000 technical assistance goals that were agreed to with management last March. Specifically, they are not preparing an IAS-compliant monthly internal financial report or the key management reports that we have been recommending and have been assisted them in developing. In addition, they still had not staffed their internal audit department. Instead, they designated the head of the financial reporting department as the internal auditor. He performs no internal auditing, and, if he remains in his current position, he would not qualify as an independent internal auditor. Because of the lack of progress on the technical assistance goals, we wrote our senior management counterpart, Deputy Director Oleg Moyseenko, and advised him that the project was coming to a close and that we needed to re-define which of our original goals could be realistically accomplished within the time available. In response to this letter, Ukrsibbank advised us that they had recently hired two internal auditors (the first one hired attended our Internal Audit Case Study course in Kharkiv in September) and would like to refocus on their internal reporting deficiencies. Accordingly, we agreed to review and comment on the new internal audit organization and procedures and provide a special, in-bank workshop on the BMRS-Advanced financial reporting software in October.

5. Statement of Work:

The Statement of Work calls for the implementation of the following five specific tasks in order to support the overall strategic objective of developing a more competitive and market-responsive private financial sector:

- Deepening of the commercial bank IAS-conversion process
- Improving financial management
- Strengthening the internal audit function
- Systems analysis
- Accounting department organization

As set forth in the June 1999 SWP, the project's tangible results and benchmarks were modified effective October 1, 1999, to better achieve the strategic objectives of the original program and support restructure initiatives planned for the systemically significant financial institutions.

6. Role of and Coordination With Other Donors or International Financial Organizations:

Specific activities which support the role of other donor agencies of international financial organizations, which were conducted during the quarter, include:

- A. During the period July 5 to July 9, Gary Fechtmeyer attended the Regional Bank Supervision Conference in Warsaw, Poland.
- B. During July, in coordination with the annual summer institutes for university faculty conducted by the Consortium for Enhancement of Ukrainian Management Education (CEUME), the project distributed descriptions of the two core courses to interested university faculty and made available detailed course materials.
- C. In July the team advisors attended the USAID sponsored contractors meeting for those projects involved with accounting reform in Ukraine
- D. During August the internal audit advisor met with Ms. Politiva, Director of Internal Audit for the NBU, and provided her with a generalized version of the risk assessment methodology developed at Aval. The generalized version included examples of how to apply the methodology using "model" bank data so that Ms. Politiva could use this material as part of NBU's internal audit directive and training programs on the risk assessment process.
- E. On August 16, the accounting and restructure teams conducted a joint presentation for the senior management meeting at Aval.
- F. In September, Mr. Fechtmeyer attended a project status and planning meeting of the Chief of Parties for the USAID and EUTACIS bank restructure teams.

B. ADMINISTRATIVE INFORMATION

International Business & Technical Consultants, Inc.
 Contract # EPE-I-00-95-00056-00
 Ukraine Accounting Reform
 Quarterly Financial Report
 July - September 2000

| <i>Level of Effort Mix</i> | Total Level Of Effort | Level of Effort Expended July – September 2000 | Level of Effort Cumulative October 1998 – September 2000 | Unused Level Of Effort |
|--|-----------------------|--|--|------------------------|
| Fixed Daily Rate Professionals | 1,595.00 | 274.00 | 1,464.50 | 130.50 |
| Local/Third Country National Professionals | 3,779.00 | 605.00 | 4,056.00 | (277.00) |
| Total | 5,374.00 | 879.00 | 5,520.50 | (146.50) |

| <i>Contract Expenditure</i> | Total Task Order Budget | Budget Expended July – September 2000 | Cumulative Expended October 1998 – September 2000 | Balance Task Order Budget |
|----------------------------------|-------------------------|---------------------------------------|---|---------------------------|
| Labor Cost (FDR) | \$2,422,139 | 422,099 | 2,222,014 | 200,125 |
| Labor Cost (Local/Third Country) | \$451,540 | 80,923 | 374,149 | 77,392 |
| Total Labor Cost | \$2,873,679 | 503,023 | 2,596,122 | 277,557 |
| Travel Cost | \$82,430 | 14,864 | 78,758 | 3,672 |
| Hotel Cost | \$179,046 | 23,185 | 176,917 | 2,129 |
| Per Diem Cost | \$59,411 | 14,208 | 48,819 | 10,592 |
| Other Direct Cost | \$198,085 | 11,264 | 116,502 | 81,583 |
| Total Cost | \$3,392,652 | 363,525 | 3,017,118 | 375,534 |

EXHIBIT I

Aval-Model Technological Card for Accrued Interest

Title: Interest Accrual

Serial Number 144

Revision Number 00 - Date 28/06/2000

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This technological cover interest accruals on

Loans to and Deposits from:

- Business entities
- Individuals
- Branches
- Doubtful Loans

Related Technological Cards covering similar areas.

| Card No. | Dated | Subject |
|-----------------|--------------|---|
| 126 | 20.10.99 | Accrual of Interest on Budget Accounts Accrual of Interest Plastic Cards Accrual of Interest Leasing Accrual of Interest EBRD Loans Accrual of Interest Interbank Loans |

APPROVED BY:

| Person | Position | Date | Signed |
|---------------|------------------------|-------------|---------------|
| Derkach OV | Chairman of the Board | 22/02/2000 | |
| ??? | Working Group Chairman | 15/02/2000 | |
| ??? | Head of Internal Audit | 10.02/2000 | |

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Procedures and Controls

Table Layout

The table recording the outline of the system has been set up as follows:
Shaded sections indicate where actions have been "guessed" and they may or may not exist at all.

No.

This is the sequence in which the action should take place.

Action

This is to record what should take place

Actions include Control Activities -

- Batch totals extracted
- System total generated.
- Limit checks
- Periodic reconciliations

Responsible

Department

This is the department that is responsible for the action

For

This is what the department is responsible for

Timing

This is when the action should take place

Documentation / Computer

Documentation:

This records the pieces of paper and files that make up the non-computer part of the system.

Documents - Key Questions:

Identification

Number (pre-numbered, system generated etc)

Content

Number of Copies

Originator

Authoriser

Checker

Where each copy is filed (alphabetically, numerically etc)

Computer:

This records where the computer interacts with the rest of the system. It should include:

Control totals generated by the system

Authorisation / limits levels

Screens used for particular purposes

Mandatory / discretionary Print outs

Etc.

Table 1 Accrual of interest on loans to Business Entities and Individuals

| No | Action | Responsible Dept | Responsible for For | Timing | Documentation / Computer |
|----|--------------------------------------|----------------------|--|---|-------------------------------------|
| 1 | Set up / amend loan agreement | Credit Dept | Accuracy of credit database | | |
| 2 | Check database accuracy | Intrabank | Communicating differences to Credit Dept | | |
| 3 | List loans for accrual | Intrabank | Communicating differences to Credit Dept | By 26 day of month | |
| 4 | Suspension of accrual | Credit Cttee. | Decision and communication with Intrabank | Day after decision? | |
| 5 | Suspension of accrual | Intrabank | Not accruing per Credit Cttee. | | |
| 6 | Prepare preliminary interest accrual | Intrabank | Agreement with Credit Dept. | Day before interest accrual date? | Preliminary Interest Accrual Report |
| 7 | Check preliminary accrual | Credit Dept | Approval and signature. | | |
| 8 | Sample examination | Intrabank | To check accuracy of calculation | | |
| 9 | Calculate final accrual | Intrabank | Produce interest accrued statements and accrued interest register. | | |
| 10 | Sign accrued interest register. | Accounting Intrabank | Chief accountant Chief officer | | |
| 11 | Pass register to follow up control | Intrabank | | | |
| 12 | | Follow up control | | | |
| 13 | Accounting | System generated | DR Accrued Income | CR Interest Income | |
| | | | 2048, 2058, 2078, 2108, 2128 3801 | 6024, 6025, 6026, 6027, 6030, 6031 3800 | |

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| Table 2 Accrual of interest on doubtful loans | | | | | |
|--|---|------------------|---------------------------------|------------------------|--------------------------|
| No | Action | Responsible Dept | Responsible for | Timing | Documentation / Computer |
| 1 | Recommendation on Classification | Credit | Monitoring customer performance | | |
| 2 | Classification as doubtful | Credit Cttee | Decision | | |
| 3 | Communication of decision | Credit Cttee | Informing Credit Dept. | Day following decision | |
| 4 | Communication of decision | Credit | Informing Intrabank. | | |
| 5 | Change of loan type to 61 | Intrabank | | | |
| 6 | Database entry | Credit Dept | Updates loans database | | |
| 7 | Prepare Preliminary Interest Accrual Report | Intrabank | Approval by Credit Dept | | |
| 8 | Submit for approval | Intrabank | Submitted to Credit Dept | | |
| 9 | Approval | Credit Dept | | | |
| 10 | Prepare consolidated memorial order | | | | |
| 11 | Approval Signature | Chief Accountant | | | |
| 12 | Update database | Operational | | | |
| 13 | Accounting | System | DR Income not paid | CR Contra Account | |
| | | | 9601 | 9910 | |

Table 3 Accrual of interest on deposits from Business Entities and Individuals

| No | Action | Responsible Dept | Responsible for | Timing | Documentation / Computer |
|----|--------------------------------------|---------------------------------------|---|---|---|
| 1 | Set Up / amend deposit agreement | Set Up of Accounts/ Financial Markets | Accuracy of deposits database | Amendments entered the day after the change | |
| 2 | Check database accuracy | Intrabank | Communicating differences to Set Up/ Financial Markets | | |
| 3 | List loans for accrual | Intrabank | Communicating differences to Set Up Dept/ Financial Markets | Second last day of month | |
| 4 | Suspension of accrual | Set Up/ Financial Markets | Decision and communication with Intrabank | Day after decision? | |
| 5 | Prepare preliminary interest accrual | Intrabank | Agreement with Set Up Dept. | Day before interest accrual date? | Preliminary Interest Accrual Report |
| 6 | Check preliminary accrual | Set Up Dept / Financial Markets | Approval and signature. | | |
| 7 | Sample examination | Intrabank | To check accuracy of calculation | | |
| 8 | Calculate final accrual | Intrabank | Produce interest accrued statements/ interest register. | | Filed by customer and by date hard and soft copies. |
| 9 | Sign accrued interest register. | Accounting Intrabank | Chief accountant Chief Cfficer/ | | |
| 10 | Pass register to follow up control | Intrabank | | | |
| 11 | Payments to customer | Intrabank | | | Payment of % balance mode screen |
| 12 | Create memorial order | System | | | |

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Table 3 Accrual of interest on deposits from Business Entities and Individuals

| No | Action | Responsible Dept | Responsible for | Timing | Documentation / Computer |
|----|--------------------------|------------------|---|--|--------------------------|
| 13 | Accounting | System generated | DR Interest Expense Demand Deposits | CR Accrued Interest Expense | |
| | Accrual | UAH Currency | 7020 Business 7040 Individual 3800 Position | 2608 Business 2628 Individuals 3801 Position | |
| | Payment | | 2608 Business 2628 Individuals | 2600,2604,2560 Client Accounts | |
| | Accounting Term Deposits | System generated | DR Interest Expense Term Deposits | CR Accrued Interest Expense | |
| | | | 7021 Business 7041 Individual 3800 Position | 2618 Business 2638 Individuals 3801 Position | |

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Table 4 Accrual of Interest on loans to / from branches

| No | Action | Responsible Dept | Responsible for | Timing | Documentation / Computer Tech Card |
|----|-----------------------------------|--------------------|---|--------------------------|------------------------------------|
| 1 | Set Up / Amend | External Relations | Accuracy of deposits database | Second last day of month | |
| 2 | Check database accuracy | Intrabank | Communicating differences to External Relations | | |
| 3 | List loans for accrual | Intrabank | | Second last day of month | |
| 4 | E-mail reconciliation | | | | |
| 5 | Prepare Interest Accrued Register | Intrabank | | | Signed By Chief Accountant |
| 6 | Submitted to follow Up Control | Intrabank | | | |
| 7 | | Follow up Control | | | |
| 8 | Accounting | | DR Interest expense | CR Accrued Expense | |
| | | | 3800 | 3905 | |
| | | | CR Accrued Expense | DR Interest expense | |
| | | | 3905 | 3904 | |

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General Comments

1. Aval's own instructions on content are not being followed
2. No mention of how input is made to computer system.
3. Separate Credit Dept front office and back office. Credit Dept (or others) should not set up / amend loans that they have agreed with customer
4. Gaps in tables represent an absence of information
5. Where do Follow Up Control fit into the system?
6. Very little on timing.
7. The section on Regulatory Basis that appears on some technological cards but not on others, is it necessary?
8. What about access and confidentiality?

Comments: Table 1: Accrual of interest on loans to Business Entities (and Individuals)

1. What set-up / completeness controls are used? Is this covered in the Tech. Card on Set Up. How does Intrabank Dept check database accuracy? Are hash / batch totals extracted to prove processing accuracy?. How are differences communicated to Credit Dept.? How does Credit Dept. signify approval?
2. What are criteria for the "list of loans for accrual". How are differences communicated to Credit Dept.? How does Credit Dept. signify approval?
3. How / when does Credit Cttee. communicate non accrual decisions to Intrabank. (Copies / authorisation / limits // control totals / filing). How is request made to Credit Cttee.?
4. What are the control totals for non accruing loans / suspension? Who reconciles?
9. Preliminary interest accrual (Copies / authorisation / limits // control totals / filing)
10. How does Credit Dept signify approval.
11. What is sample examination to check accuracy of calculation? How is sample selected? What are pass / fail criteria? (Copies / authorisation / limits / control totals / filing)
12. What are interest accrued statements. (Copies / authorisation / limits // control totals reconciliation with total / filing). What is interest accrued register. (Copies / control totals reconciliation with total / filing)
13. What do Follow up Control do with the interest accrued register?
14. Are any memorial orders prepared?
1. 12 What do Follow up control do?

Comments: Table 2: Accrual of interest on doubtful loans

1. Where is this step set out?
2. How is Credit Committee notified that loan is doubtful? (Copies / authorisation / limits // control totals reconciliation with total / filing)
3. How is Credit Committee decision communicated to Credit Dept and Intrabank (Copies / authorisation / limits // control totals reconciliation with total / filing)?
4. *Communication of decision should be direct to Intrabank for better internal control.*

5. How does Credit Dept. inform Intrabank (Copies / authorisation / limits / / control totals reconciliation with total / filing)?
 6. How is change of loan type controlled? (Copies / authorisation / limits / / control totals reconciliation with total / filing)?
 7. How is change of loan type reconciled with entries made by Credit Dept.
For better internal control separate database entry from front office.
 8. Preliminary Interest Accrual report (Copies / authorisation / limits / control totals / filing)?
 9. How does Credit Dept signify approval of report?
 10. What is operational dept (that makes accounting entries)?
 11. How is follow up control involved?
 12. Is accrued interest register is produced? (Copies / authorisation / limits / control totals / filing)
 13. How often is account 9601 (Accruals on doubtful loans) reconciled?
 14. Is 9601 posted to customer accounts at all?
- Other

Comments: Table 3: Accrual of Interest on Deposits

1. How is set up controlled? (Copies / authorisation / limits / control totals / filing) Are two departments responsible for the accuracy of the database (Set Up and Financial Markets)?
2. How does Intrabank check on database accuracy?
3. What are the criteria in listing loans for accrual (Copies / authorisation / limits / control totals / filing). How are non accruing deposits handled? (Copies / authorisation / limits / control totals / filing)
4. What is the procedure for suspension of accrual?
5. Preliminary Interest accrual report. (Copies / authorisation / limits / control totals / filing)
6. How is preliminary interest accrual checked?
7. What are criteria for sample examination of preliminary accrual report?
8. How is final interest accrual checked? (Copies / authorisation / limits / control totals / filing).
9. Interest accrued statement and register? (Copies / authorisation / limits / control totals / filing).
10. What is function of Follow up Control?
11. Payment to customer (Copies / authorisation / limits / control totals / filing)
12. Memorial order (Copies / authorisation / limits / control totals / filing)
13. Accounting Account numbers incorrect?

Comments: Table 4: Accrual of Interest on loans to / from branches

1. Same comment re separation of back and front office functions.
2. How does Intrabank check on database accuracy Check accuracy (Copies / authorisation / limits / control totals / filing).
3. Are balances listed? (Copies / authorisation / limits / control totals / filing).
4. Who reconciles? (Copies / authorisation / limits / control totals / filing).
5. Interest Accrued Register (Copies / authorisation / limits / control totals / filing).
6. Follow Up Control do what?

Sample Documents / Reports

This section will contain samples of the documents and reports referred to in the preceding paragraphs.

EXHIBIT II

Aval-Memo on IAS
Adjustments not made

Translation of Aval Internal Memorandum

AVAL Bank
The Head office

04-01/03-183
of 06/22/00

TO: International Business & Technical Consultants, Inc.
U.S. Agency for International Development
Ukrainian Bank Accounting and Operations
Infrastructure Development Project

Following the results of audit examination carried out by Arthur Andersen company, there is a mismatch in financial result calculated by the auditors and the amount of income reflected in the balance sheet statement of AVAL Bank on account #5040.

Major reasons for these differences are as follows:

1. According to auditors' calculations, the historic value of fixed assets of AVAL Bank is somewhat lower than that stated in the balance sheet statement. Consequently, there is a decrease in depreciation expense and an increase in the income of the bank according to the estimates of the auditors.
2. According to the calculations made by the auditors, there is an excessive reserve in place. The decrease in reserve results in reduction of bank expense and increases its income.
3. Reflection of difference in rate of exchange.

Following the results of the external audit examination ('Arthur Andersen' auditing company) the commercial banks are allowed to adjust their books as recommended by the National Bank of Ukraine.

However, the management of AVAL Bank considers that it is not reasonable to make these adjustments at the moment because of the following:

1. The National Bank of Ukraine has not approved the policy on making annual adjustments following the results of the external audit examination.
2. The issue of reflection adjusted income in case when the shareholders meeting at which the dividends are approved is held prior to the day the audit report is obtained is not addressed. Income adjustment resulting in its increase will lead to negative public opinion about the bank.
3. In 1998 and 1999 there were two reevaluations of fixed assets made by AVAL Bank. The management of the bank reckons that as a result of reevaluations made the book value of fixed assets represents the maximum approximation to the market.
4. In January 2000, the National Bank of Ukraine took an examination of AVAL Bank. According to the NBU report, the loan loss reserve is not accrued in full.

5. Revaluation of FX assets and liabilities is made by AVAL Bank on a daily basis to comply with the NBU policy. Making adjustment entries goes against the requirements set by the National Bank of Ukraine.

Deputy Chairman
of AVAL Bank Managing Board

Smoliy Y.V.

The Chief Accountant
of AVAL Bank

Voloshchuk I.P.

Prepared by:
Tarnavska A.A.
295-87-14 (4-54)

EXHIBIT III

BMRS Advanced Course

- a) Course Description
- b) Course Schedule
- c) Outline of Student Guide

International Business & Technical Consultants, Inc.

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Ukrainian Bank Accounting and Operations Infrastructure Development Project

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Bank Management Reporting System (BMRS)-Advanced Course

Presented by

IBTCI as Contractor for

**USAID Ukrainian Bank Accounting and
Operations Infrastructure Development Project**

Course Description

The BMRS-Advanced Course is a computer-assisted simulation workshop to train senior accounting staff and financial analysts in the preparation and analysis of management reports using BMRS software. This workshop would also be of interest to senior operating management in better understanding how management reports can be used for the evaluation of bank performance and monitoring selected banking risks.

The workshop is based on financial information created for "Test Bank" from simulated NBU data files 01, 02, and 25. During the course, each student will gain hands-on experience in using the software program to prepare the management reports. Immediately following the brief preparation phase, the participant will be trained in the analysis of the management reports through an interactive workshop discussion technique together with some financial modeling.

The components of the workshop are as follows:

- Characteristics of properly prepared and effective management reports
- Explanation of how the NBU data files are used in the software program, the comparative information in the files, and preparation of the detailed balance sheet and income statement used as the foundation for the management reports.
- Preparation and analysis of the BMRS management reports-
 - Condensed financial report and analysis schedules
 - Foreign currency position
 - Daily flow of funds
 - Branch performance
- Preparation of BMRS management reports from participant bank's data files (Optional)

The course is suitable for senior accounting managers, financial analysts and, internal audit staff who design management reports. Also, since the reports cover asset and liability yield analysis, treasury operations, and branch performance, operating managers from those departments would also benefit from the workshop. It would be helpful for some of the students to have completed the BMRS-Basic course and be familiar with using the basic BMRS software "Storm". For those

participants who wish instruction in using "Storm", a half-day training session prior to the beginning of the BMRS-Advanced course can be arranged. This session would be devoted solely to a review and practice in using the basic Storm program.

Students who successfully complete this course will have the benefit of gaining practical experience in the preparation and analysis of key management reports which would typically be prepared in an international banking environment. Further, the participants would receive the complete course materials including a CD-ROM with the BMRS software, management reporting modules, and installation instructions for implementation in their banks.

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Bank Management Reporting System (BMRS)-Advanced Course

Course Schedule

General Course Framework:

- 1) The course will be a two-day course with an optional half-day “up-front” to familiarize participants with how to use BMRS program (Storm) if they have not already been trained in the program (Intro Day).
- 2) Days 1 & 2 are devoted to the preparation and analysis of the management reports. Because preparation of the reports is automated through the software program, the time required for that element of the course is minimal. In fact, it is recommended that only a few computers be available to demonstrate the preparation process so that the course does not overemphasize the computer aspects at the expense of the analysis process.
- 3) After preparation, the participants will be asked to analyze the individual statements and will then, under the guidance of the instructor, discuss their observations. Each statement will have key analysis (teaching) points to be identified and discussed.

| Estimated Time | Description of Module | Key Teaching Points |
|--|---|---|
| Intro Day-Those Participants not familiar with BMRS | | |
| 4 hours | Introduction to BMRS | <ol style="list-style-type: none">1. Installation of BMRS and preparation of data files.2. Exporting to Excel detailed balance sheet and income statement formats.3. Introduce “out of balance” problem/solution4. Making adjustments (interbranch elimination, reclassify prior period adjustments)5. Add/Delete/Change account codes and mapping |
| Day 1 | | |
| ½ hour | Introduction to management reporting and BMRS | Describe key elements in an effective bank management report |
| 1 hours | Preparation of BMRS | <ol style="list-style-type: none">1) Identification of case study data files2) Identification of comparison periods to be created from data files.3) Post correcting entries adjustments (interbranch elimination, reclassify prior period adjustments)4) Preparation of detailed income statement and balance sheet.5) Cursory review of detailed statements.<ol style="list-style-type: none">a) Quick reconciliation of retained earnings.b) Identification of unusual balances for further investigation |
| Coffee Break | ½ hour | |
| ½ hour | Preparation of BMRS continued | See above |

| | | |
|---------------------|--|---|
| ¼ hour | Preparation of FX position report | Note: Discussion of report done as part of Condensed Financial Report |
| ½ hour | Preparation of Senior Management Condensed Financial Report and Analysis Schedules | Note: Discussion follows |
| Lunch Break | 1 hour | |
| 1 ½ hours | Analysis of Senior Management Condensed Financial Report and Analysis Schedules | <ol style="list-style-type: none"> 1) Compare condensed balance sheet and income statement to detailed BMRS report. 2) Discuss condensed income statement format and results 3) Components of Net Interest Income (NII) <ol style="list-style-type: none"> a) Use of average balances. b) Demonstrate how improvements in asset and deposit "mix" affect NIM. 4) Operating expense comparison. <ol style="list-style-type: none"> a) Explain unusual variations between periods b) Discuss Operating expense ratios 5) Condensed Balance Sheet 6) Analysis of Changes in Loan and Deposit accounts 7) Preparation of summary FX position report. <ol style="list-style-type: none"> a) Explain need to measure risk by maturity category b) List FX dominated accounts "not mapped" and discuss why. c) Explain reporting of FX dominated "reserve" accounts d) Discuss relative FX risk in off-balances sheet accounts. e) Compare BMRS FX position report with NBU regulatory report |
| Coffee Break | ½ hour | |
| 1 hour | Analysis of Senior Management Condensed Financial Report and Analysis Schedules, continued | |
| 1 hour | Preparation of Daily Funds Flow | Cash flow will be completed for two consecutive days. |
| 1 hour | Evaluation of Daily Investment Performance | <ol style="list-style-type: none"> 1) General discussion of funds flow report. 2) The participant will use the program to Estimate excess (deficient) statutory reserve and non-invested funds. Includes discussion of non-invested funds and effect on NII |
| Day 2 | | |
| 1 ½ hours | Daily Funds Flow Simulation | Simulate the days treasury daily investment activity |
| Coffee Break | ½ hour | |
| ½ hour | Preparation of Branch Performance Report for two branches over | |

| | | |
|---------------------|---|--|
| | three months | |
| 1 hour | Analysis and Discussion of Branch Performance Report | <ol style="list-style-type: none"> 1. Branch trend in "earning asset" to "total asset" ratio. 2. Branch NII performance 3. Employee and operating expense to asset ratio will be compared between branches. 4. Discussion of transfer pricing. |
| Lunch Break | 1 hour | |
| 1 ½ hours | Analysis and Discussion of Branch Performance Report, continued | |
| Coffee Break | ½ hour | |
| 1 hours | Preparation of Participant Banks' Management Reports | Optional |
| ½ hour | Closing discussion | |

(Training Center Letterhead)
Bank Management Reporting System (BMRS)-Advanced Course
Presented by
IBTCI as Contractor for
USAID Ukrainian Bank Accounting and
Operations Infrastructure Development Project

Outline of Student Guide

- I. Introduction to Characteristics of Management Reporting and the BMRS-Advanced System
 - A. Characteristics of Management Reporting
 - B. Sample list of Recommended Management Reports
 - 1. For Senior Management
 - a) Evaluate Performance
 - b) Monitor Risk
 - 2. To support Operations
 - C. BMRS-Advanced System
 - 1. Loading multiple NBU data files
 - 2. Introduction to comparison feature
 - 3. Preparation of detailed financial reports
- II. Senior Management Condensed Financial Report and Analysis Schedules
 - A. Preparation
 - B. Analysis of Report Content For “Test Bank”
- III. Daily Flow of Funds
 - A. Preparation
 - B. Analysis of Report Content
 - 1. Initial Report
 - 2. Evaluation of Treasury Operations
 - 3. Daily funds investment simulation
- IV. Branch Performance
 - A. Preparation
 - B. Analysis of Report Content
- V. Appendix
 - A. Installation instructions for Storm and NBU data files
 - B. Listing of Test Bank Data Files
 - C. Samples of Management Reports
 - D. Instructions for setting up BMRS for preparation of management reports
 - E. Instructions for preparation of Condensed Senior Management Reporting Package
 - F. Instructions for Foreign Currency Position Report
 - G. Instructions for Preparation of Daily Flow of Funds Report
 - H. Instructions for Preparation of Branch Performance Report

EXHIBIT IV

Aval – Internal Audit of Plastic Card Operations



Audit Program for Financial Operational Audit of Plastic Card Activities of Aval Bank

Table of Contents

- I. Executive Summary
- II. Introduction and Background
 - A. Definition of Terms
 - 1. Operational Audits
 - 2. Credit Card Lending
 - 3. Management Should Evaluate Risks Associated with Plastic Card Lending
 - a. Transaction Risk
 - b. Compliance Risk
 - B. Scope
 - C. Objectives
 - D. Preliminary Survey
 - 1. Approach to Planning the Audit Program
 - a. Gathering Information
 - b. Informed Approach to Planning the Audit
 - c. The Focus will Vary Depending on the Nature of the Audit
 - d. Procedures to Follow in Carrying out the Survey
 - e. Summary of Results
- III. Preliminary Survey Report
 - A. Chronology of Past Efforts to Conduct the Plastic Card Audit
 - B. Automating Components of the Plastic Card Audit
 - C. The Plastic Card Management Process (Attachment IV a)
 - D. Organizational Chart of the Credit Card Division of Aval Bank (Attachment IV b)
 - E. Approach to Accomplish Audit Objective
 - F. Preliminary Findings from the Survey
- IV. Audit Grid Matrix Program
 - A. Deliverables
 - B. Implementation by Internal Audit Department
 - C. Next Steps to be Taken



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| | |
|----------------|--|
| Attachment I | FFIEC Handbook, Chapter on Retail EFT Activities (USA) – available in English only |
| Attachment II | IIA Audit Standard on Scope of Work – available in English only |
| Attachment III | IIA Audit Standard on Performance of Work – available in English only |
| Attachment IVa | General Description of Functions in Plastic Card Operations |
| Attachment IVb | The Plastic Card Management Process (diagram) |
| Attachment IVc | Organization Chart of the Credit Card Division |
| Attachment IVd | List of Technology Cards Relating to Plastic Card Transactions |
| Attachment IVe | Internal Control Questionnaires |
| Attachment IVf | Audit Programs |
| Attachment IVg | Audit Grid Matrix |

Audit Program for Financial Operational Audit of Plastic Card Activities of Aval Bank

I. Executive Summary

This audit program is the last of several steps taken by IBTCI/USAID to develop a comprehensive audit plan for the audit of plastic card activities at Aval Bank. The Internal Auditors have done limited flowcharting of some areas in the Credit Card Division. They have also performed some audits in this area, however, of limited scope, in the last two years.

This audit program provides a comprehensive, "grid matrix" approach, lining up Credit Card Department activities with corresponding system reports and applicable sections of the Technology Cards.

In addition, a macro random selection procedure has been built into the Excel Audit Grid file and delivered to Internal Audit to use in any random selection procedure, either for a whole number or a percentage random selection. It is universal in application, not dependent on record type, size, etc.

The audit manual sections for Merchant, Cardholder and ATM audits have been updated to include the random selection procedure and steps in the Audit Grid Matrix.

The work of the consultants is the property of Internal Audit to use or modify and update as they choose.

Implementation by Internal Audit

Consultant met with Internal Audit Department to deliver:

1. Audit Grid Matrix File.
2. Revised Audit Manual Section on Cardholder Activities in Russian.
3. Random Selection Macro.
4. Demonstrate Random Selection Macro.
5. Six audit steps to select from to implement the Random Selection Macro.

Internal Audit:

1. Accepted the Random Selection Macro.
2. Selected data for the two audit steps for random selection by the Macro.
3. Successfully tested the Macro and implemented it for these two audit steps of the Credit Card Division audit.
4. Successfully reviewed the Audit Grid Matrix File (in Russian and English) and the Internal Auditors accepted it as part of their audit work and planning – they were interested in how it displayed relationships between the Technology Card process steps, and available system reports in the audit planning, execution, and update process.

Next steps to be taken:

1. Internal Auditors should continue flowcharting, at a more detailed transaction level, concentrating on the following functional areas, in descending order of priority (highest priority to the first), starting with the functional process steps, a-e, and concluding with those of a wider system view, f-j:
 - a. Conclusion of agreements
 - b. Card issuing - personalization and delivery to the cardholder
 - c. Replenishment
 - d. Settlements
 - e. International payment system clearing
 - f. Customer disputes resolution – mostly charge-backs
 - g. Overdraft management
 - h. Technical support of ATMs and database management (Transmaster) and error management
 - i. Adjustments/corrections input – controls over all manual database entries
 - j. System flows and controls on processing data in database updates
 - i. Between Aval's Transmaster and UPC's Transmaster, and
 - ii. Between Aval's Transmaster and the General Ledger.
2. Internal Auditors should use the Excel Random Selection Macro Spreadsheet on the Audit Grid File to generate random samples in each area of the audit program as required.
3. Internal Auditors should continue work on validity checks and summary checks of cardholder updates indicated in section E of the audit report (area highlighting update control weaknesses).
4. Internal Auditors should be aware of control weaknesses in conducting the audit, in order to provide additional audit focus and make recommendations for improving internal system controls in these areas. See Audit Grid File for specific references.

II. Introduction and Background

A. Definition of Terms

1. Operational audits review a specific department, division, or area of a bank. This type of audit includes a review of policies, procedures, and operational controls (e.g., loan review) to determine whether risk management, internal controls, and internal processes are adequate and efficient. Operational audits generally include procedures to test integrity of accounts, regulatory reports, and other aspects of operations. These audits may also include a review of management and employee compliance with bank policies and procedures. (Source: Comptroller's Handbook on Internal and External Audit, U.S. Department of the Treasury)

2. Internal Controls for Retail EFT – Attachment I, FFIEC Handbook Chapter on Retail EFT Activities – Internal Controls.

3. Management Should Evaluate Risks associated with Plastic Card Lending -
A variety of factors have caused the plastic card business to become one of the most complex and competitive areas in the financial services industry. The market environment and risks make it essential for issuing banks to have written operating policies tied to well-conceived business plans and risk management systems.

From a management perspective, risk is the potential that events, expected or unanticipated, may have an adverse impact on the bank's capital or earnings. The OCC has defined nine categories of risk for bank supervision purposes. These risks are **Credit, Interest Rate, Liquidity, Price, Foreign Exchange, Transaction, Compliance, Strategic, and Reputation**. These categories are not mutually exclusive, any product or service may expose the bank to multiple risks. The primary risks associated with credit card lending are: **credit, transaction, liquidity, strategic, reputation, interest rate, and compliance risk**.

All these risks should be taken into account by Aval management in operations planning and by Internal Audit in audit planning. However, two appear to be most relevant to Aval Bank's current operations in the plastic card area. They are: (1) Transaction Risk and (2) Compliance Risk. Therefore, we paid special attention to these two risk areas in planning this audit program.

a. Transaction Risk

Transaction risk is the risk to earnings or capital arising from problems with service or product delivery. This risk is a function of internal controls, information systems, employee integrity, and operating processes. Transaction risk exists in all products and services.

A bank's success in plastic card operations depends in part on achieving economies of scale. Credit card operations are highly automated, have a large transactional volume, and require strong operational controls. Aggressive growth has the potential to stretch operational capacity and can cause problems in handling customer accounts and in processing payments. The merchants acquiring business for the Bank's card accounts need accurate and immediate information for detecting customers' credit limits and blocked amounts after each transaction before posting to card accounts. Pin and card account number security must be maintained to safeguard the integrity of the transactions.

To control transaction risk, a bank should maintain effective internal controls and use comprehensive management information systems. One can assess transaction risk by evaluating the adequacy of plastic card application and processing systems and controls, the capabilities of systems and technologies in relation to current and prospective volume, contingency preparedness, and exposures through the payment system.

b. Compliance Risk

Compliance risk is the risk to earnings or capital arising from violations or non-conformance with laws, rules, regulations, prescribed practices, or technical standards. In Ukraine, Aval Bank should be in compliance with NBU regulations, directives and instructions that apply to plastic card operations. It should also follow Konts supporting technical documents for issuance of plastic cards using the Transmaster System.

Management should ensure that staff involved in credit scoring, processing applications, and collections activity comply fully with these directives, instructions, and supporting technical documents.

In addition, compliance with cardholder and merchant agreements should be assured, and tested as part of the audit process.

B. Scope

Plastic Card Activities of Aval Bank include cardholder activity, merchant activity and ATM-cash withdrawal activity. See Attachment II for IIA standards on developing scope of work.

C. Objectives

- (1) Design and testing of an audit program that automates random sampling for comparison of data in key control/test areas in the flow of the plastic card transactions with POS, ATMs and domestic and International Payment Systems, Cardpay and UPC.
- (2) Revision of Internal Audit Manuals for Audits of Cardholder Activities, Merchant Activities and ATMs, to include the automated random selection program in each area.
- (3) To advise bank management on the strength and weaknesses of the operation of its internal control system.
- (4) Provide Internal Audit with a tool, the Plastic Card Audit Program Grid, to help plan and revise audit steps and procedures in the plastic card area of its business in an interactive way with linkages to Technology Card work steps and available system report outputs.

D. Preliminary Survey

I have completed the Preliminary Survey of this audit through the process of interviewing key persons working in the target area (Plastic Card Division, Cardpay and UPC) and observing and evaluating the systems of internal control, the financial systems flows and as a result, develop the audit program.

1. Approach to Planning the Audit Program

One of the key components of planning the audit work and audit program is the Preliminary Survey. (See Attachment III for *IIA standards on planning the audit work.*) *My survey followed the IIA guidelines:*

Performing, as appropriate, a survey to become familiar with the activities, risks, and controls to identify areas for audit emphasis, and to invite auditee comments and suggestions.

a. A survey is a process for gathering information, without detailed verification, on the activity being examined. The main purposes are to:

- Understand the activity under review.
- Identify significant areas warranting special emphasis.
- Obtain information for use in performing the audit.
- Determine whether further auditing is necessary.

b. A survey permits an informed approach to planning and carrying out audit work, and is an effective tool for applying the internal auditing department's resources where they can be used most effectively.

c. The focus of a survey will vary depending upon the nature of the audit.

d. The scope of work and the time requirements of a survey will vary. Contributing factors include the internal auditor's training and experience, knowledge of the activity being examined, the type of audit being performed, and whether the survey is part of a recurring or follow-up assignment. Time requirements will also be influenced by the size and complexity of the activity being examined, and by the geographical dispersion of the activity.

e. My preliminary survey followed the following procedures:

- Discussions with the Director of the Credit Card Division and extensive interviews with the Heads of each of the Credit Card Division's Departments, Cardpay and UPC.
- Involvement of the Internal Audit Department of Aval Bank in each of these meetings and steps.
- On-site observations.
- Review of management reports and studies.
- High level flowcharting. Detailed flowcharting was beyond the scope of the work. However, Internal Audit was provided with instructions, procedures and priorities for detailed flowcharting.

—Functional "walk-through" (tests of specific work activities from beginning to end).

— Documentation of this workflow analysis and start building the audit program. It should provide common ground for the internal auditors and credit card management to interact in a more positive and constructive manner.

f. A summary of results and preliminary findings was prepared at the conclusion of the survey, in the form of a Preliminary Survey Report which follows.

III. Preliminary Survey Report

A. Chronology of Plastic Card Audit

The Bank's Internal Audit Department has made several attempts to audit the credit card activities of the Bank, starting April 1, 1999. The project staff have been providing technical assistance to them in each of these efforts. While they have delivered two reports they have only resulted in partial audit coverage of the Credit Card Division:

| Date | Action Done | Action Performed by |
|----------------------|--|----------------------------|
| April 1, 1999 | Planning begun for Audit of Plastic Card Operations | Aval IA |
| April 1 to July 1999 | Limited scope audit performed of account opening and closing balance | Aval IA |
| July 15, 1999 | Plastic Card operations designated as a "Pilot Audit" | Aval IA/IBTCI |
| September 1999 | Planning completed for audit of merchant activity: Fieldwork begins | Aval IA |
| December 1, 1999 | Interim Audit Report issued on Merchant activity: <ul style="list-style-type: none"> • Confirmation step not performed • Settlements not tested | Aval IA |
| January 2000 | Advisors send letter to Chairman summarizing procedural deficiencies noted in audit. Recommend further audit of merchant activity be postponed until deficiencies corrected. | IBTCI |
| April 2000 | Advisors and Aval agree to change Pilot Audit to Audit of an Aval Branch | Aval IA/IBTCI |
| May 2000 | Advisors informed that Cardholder audit completed, denied access to report and working papers. | Aval IA |
| June 2000 | Advisors recommend bringing an "IT" specialist to automate components of the Plastic Card audit. | IBTCI |

B. Automating Components of the Plastic Card Audit

1. Objective is to produce an audit program that automates random sample selection and provides specifications for automated comparison of data in key control/test areas in the flow of the plastic card transactions with POS, ATMs and domestic and International Payment Systems, Cardpay and UPC.
2. User of this program will be the Internal Audit Department, not the Information Technology Division. Internal Audit will take ownership of this program and implement it. A diagram is provided to show where this audit process fits into the overall management framework of plastic card operations.

C. The Plastic Card Management Process (Attachment IV b)

D. Organizational Chart of the Credit Card Division of Aval Bank (Attachment IV c)

E. Approach to Accomplish this Audit Objective:

1. Probable audit areas to automate:
 - a. Random selection of records for conducting audit tests – completed.
 - b. Validity checks of Q-File update of Transmaster System in UPC from Aval Bank, e.g. values or number of plastic card transactions sent and received.
 - c. Summary checks or tests of total plastic card debits, credits and balances for the data entered into General Ledger operating day.

F. Preliminary Findings from Survey

Need for overall daily reconciliations of account data sent with that received for:

1. Plastic Cards Updates (Transmaster)
2. Plastic Cards vs. Operating Day
3. Plastic Cards vs. Intra-Day Database
4. Daily control Summary Totals

For example we found that:

1. Q-file update of Transmaster System in UPC from Aval Bank Transmaster System four times a day – need for improvement in
 - a. No validity checks of values or number of transactions sent and received.
 - b. No summary checks of total debits, credits and balance for the data entered into the system
 - c. Rows are replaced rather than values updated as would be preferred
 - d. Error messages during transmission, while few on each transmission are cumulative to the database and may be very significant over time. They should be recorded in a register with columns for a date and time of resolution.
2. Operating day update at 10:00 am each day for the work of the previous day

- a. No validity checks of values or number of transactions sent and received.
 - b. No summary checks of total debits, credits and balance for the data entered into the system
 - c. No daily, weekly or monthly totals for the entire GL or for product lines. Only show totals for branches and subsidiary ledgers.
3. While current systems seem to process the daily updates to the Transmaster and General Ledger systems adequately, there is no apparent process for reconciliation during update of systems. The view appears to prevail that as long as the transactions are processed on time, and the merchants and cardholders do not complain, then all is well. However, customers have been provided only two telephone lines to report their problems to the bank with no provision for stacking calls or for tracking lost or busy calls. We were informed that these service levels are now in the process of being upgraded. Nevertheless, records show that approximately 24,000 plastic card account cancellations have occurred in the past few years, since the Transmaster system was implemented. Rapid growth in the total number of new cardholders has overcompensated for this loss, but nevertheless, they may represent dissatisfied customers who have problems with their account balances. Credit Card Division reports show that in some recent months growth in number of closed accounts has exceeded growth in new accounts. There is no report on the reasons for these cancellations.
 4. The current state of systems that support plastic card transactions appears to be a patchwork of internally developed software to process and transport data and for updates to and from the Transmaster and General Ledger systems. They operate adequately to "process the work of the day" but lack daily reconciliations to assure account data sent was received (transmission integrity). There is also a need for better summary reports to management by product group.
 5. Internal Audit has successfully tested and implemented the random sampling macro, developed as part of the audit program, and intends to use the audit grid matrix in its audit work.

IV. Audit Grid Matrix Program

A. Deliverables

This audit program (Audit Grid Matrix Program) is the last of several steps taken by IBTCI/USAID to develop a comprehensive audit plan for the audit of plastic card activities at Aval Bank. (Attachment IV g, Excel file). The Internal Auditors have done limited flowcharting of some areas in the Credit Card Division. They have also performed some audits in this area, however, of limited scope, in the last two years.

This audit program provides a comprehensive, "grid matrix" approach, lining up Credit Card Department activities with corresponding system reports and applicable sections of the Technology Cards.

In addition, a macro random selection procedure has been built into the Excel Audit Grid file (Attachment IV h, Excel file) and delivered to Internal Audit to use in any random selection procedure, either for a whole number or a percentage random selection. It is universal in application, not dependent on record type, size, etc.

The Internal Audit Manual sections for Merchant, Cardholder and ATM audits have been updated to include the random selection procedure and steps in the Audit Grid Matrix and Internal Control Questionnaires have been provided (Attachments IV e & f).

The work of the consultants is the property of Internal Audit to use or modify and update as they choose.

B. Implementation by Internal Audit

Consultant met with Internal Audit Department to deliver:

1. Audit Grid Matrix File.
2. Revised Audit Manual Section on Cardholder Activities in Russian.
3. Random Selection Macro.
4. Demonstrate Random Selection Macro.
5. Six audit steps for the Internal Audit to choose from to implement the Random Selection Macro.

Internal Audit:

1. Accepted the Random Selection Macro.
2. Selected data for the two audit steps for random selection by the Macro in the area of merchant and ATM activity.
3. Successfully tested the Macro and implemented it for these two audit steps of the Credit Card Division audit.
4. Reviewed the Audit Grid Matrix and its relationships to audit planning and execution and accepted it as part of their audit work and planning. They were interested in how it displayed relationships between the audit steps, Technology Card process steps, and available system reports.

C. Next steps to be taken:

1. Internal Auditors should continue flowcharting, at a more detailed transaction level, concentrating on the following functional areas, in descending order of priority (highest priority to the first), starting with the functional process steps, a-e, and concluding with those of a wider system view, f-j:
 - k. Conclusion of agreements
 - i. Corporate salary projects
 - ii. Corporate cards

- iii. Individual cardholders
- iv. Merchants
- v. ATM site placement agreements
- vi. International payment systems
- l. Card issuing
 - i. Personalization
 - ii. Delivery to cardholder
- m. Replenishment
 - i. Individual cardholder accounts
 - ii. salary projects
 - iii. corporate cards
 - iv. ATMs
- n. Settlements
 - i. Merchants
 - ii. Financial Institutions
 - iii. Payment Systems
 - iv. ATMs
 - v. Affiliated Banks
 - vi. Joint Projects
- o. International
 - i. Payments
 - ii. Settlements
 - iii. Transfers
- p. Customer disputes resolution – mostly chargebacks
- q. Overdraft management
- r. Technical Support
 - i. ATM operation, management and support
 - ii. Database management
 - 1. Process charges and administration of database on Transmaster system
 - iii. Error management – should be a register for daily transmission error messages showing time and date of occurrence and of resolution.
- s. Adjustments/corrections input (all manual database entries). There should be a log of all manual entries, with justification and authorization noted.
- t. System flows and controls on processing data in database updates
 - i. Between Aval's Transmaster and UPC's Transmaster, and
 - ii. Between Aval's Transmaster and the General Ledger.
- 2. Internal Auditors should use the Excel Random Selection Macro Spreadsheet on the Audit Grid File to generate random samples in each area of the audit program it is required.
- 3. Internal Auditors should continue work on validity checks and summary checks of cardholder updates indicated in section E of the audit report (area highlighting update control weaknesses).
- 4. Internal Auditors should be aware of control weaknesses in conducting the audit, in order to provide additional audit focus and make recommendations for improving internal system controls in these areas. See Audit Grid File for specific references.

RETAIL EFT (ATM AND POS)

CHAPTER 20

Automation has enabled banks to electronically perform many retail banking functions formerly handled manually by tellers, bookkeepers, data entry clerks and other banking personnel. Examples of retail Electronic Funds Transfer (EFT) systems include automated teller machines (ATM), point-of-sale (POS) networks, debit and smart cards, and home banking. Accordingly, the need for physical banking facilities and related staff has been reduced. EFT and related banking services also has brought access to, and control of, accounts closer to the consumer through use of widely distributed unstaffed terminals and merchant facilities. EFT related risk to a financial institution for individual customer transactions is generally low, since the transactions are usually for relatively small amounts. However, weaknesses in controls that could lead to incorrect or improper use of several accounts could lead to significant losses or class action suits to a financial institution. Examinations of retail EFT facilities should focus on the potential large scale risks of a given product.

As with other EFT services, financial institutions have found it beneficial to share their ATM and POS systems' costs and realize economies of scale. This has led some institutions to form alliances that are mutually beneficial. Two examples are:

- Shared systems + A group of financial institutions mutually research, install, market and operate the system.
- Interchange systems + Separate institutions with ATM programs or separate shared systems allow each other's customers use of their machines.

Additionally, there are single institution systems, where only the customers of the bank that developed and installed the ATM system may use the machine.

Fraud, robbery and malfunction are the major risks in an ATM environment. Although the use of plastic cards and PINs act as a deterrent, there is a risk that an unauthorized individual may obtain them. Customers even may be physically accosted while making withdrawals or deposits at ATM locations. Some institutions have decreased this risk by installing surveillance cameras and access/entry control devices.

AUTOMATED TELLER MACHINES (ATM)

An ATM is an EFT terminal that is capable of performing many routine banking services for the customer. ATMs handle deposits, transfers between savings and checking accounts, balance inquiries, withdrawals, small short-term loans and payments to third parties. ATMs usually operate 24 hours a day and are located both on and off bank premises. Daily withdrawals are normally limited to relatively small amounts (usually \$500 or less). Deposits are processed in the same manner as if handled by a teller.

ATMs are generally activated through use of a plastic card encoded with a machine readable customer identification number. In most systems, the customer is required to enter a corresponding personal identification number (PIN).

ATM machines operate in either off-line or on-line mode. Off-line transactions are recorded on tape and physically transported to the financial institution for daily processing. Since off-line systems are not directly connected to the financial institution's computer system, balance verification is normally limited to the customer's opening balance. On-line systems are directly connected to a financial institution's computer system. The computer processes each transaction immediately and provides instant account balance verification. On either system, a card is normally captured if misuse is indicated (e.g., reported stolen or improper PIN number).

POINT-OF-SALE SYSTEMS (POS)

A POS system transaction is defined as an electronic transfer of funds from a customer's checking or savings account to a merchant's account to pay for goods or services. Transactions are initiated from POS terminals located in department stores, supermarkets, gasoline stations, and other retail outlets. In an electronic POS system, a customer pays for purchases using a plastic card (e.g., ATM card or debit card). The store clerk enters the payment information into the POS terminal and the customer verifies the transaction by entering a PIN. This results in an automatic debit to the customer's account and credit the merchant.

POS transactions may either be processed through single-institution unshared systems or multi-institution shared networks. Participants in a shared systems settle daily, on a net transaction basis, between each other. In unshared systems, the merchants and customers have accounts with the same financial institution. Thus, the need to settle for transfer of funds between banks is eliminated.

As with other EFT systems, POS transactions are subject to risk of loss due to fraud, mistakes, and system malfunction. POS fraud is caused by stolen cards and PINs, counterfeit cards, and direct computer access. The system also is susceptible to errors such as debiting or crediting an account by too much or too little and entering unauthorized transactions. For the most part, POS systems usually deal with these risks by executing bank-merchant and bank-customer contracts that delineate each party's liabilities and responsibilities. Also, consumers are protected by state and federal statutes limiting their liability if they give notice of a lost, stolen or mutilated card within a specified time period. Another risk inherent in POS systems is that of computer malfunction or downtime. Also, financial institutions offering POS services should provide for adequate records backup.

DEBIT AND SMART CARDS

Other funds transfer related activities that use plastic card and PIN access are debit cards and smart cards. While not EFT systems by themselves, they may be used in conjunction with EFT systems. Debit cards may draw against available balances or lines of credit in related deposit accounts. They can be used for currency withdrawals by ATMs or for the direct purchase of goods or services from retailers using POS or paper-based settlement systems.

Smart cards contain a microchip which can store customer account profiles and credit line balances, as well as a record of transactions. When the card is used to make a purchase, the amount of the purchase is deducted from the balance remaining in the card's memory. Once the credit line in the card is exhausted, it can be replenished. Smart cards do not require on-line terminals.

HOME BANKING

Home banking allows customers to determine their bank account balances, make bill payments, and transfer funds between the customer's own bank accounts via telecommunications lines. These services, which were originally performed solely by telephone, may employ either telephone or personal computers (PCs). To access the account, the customer dials a designated phone number and enters an account number and PIN. If a transfer is to be made, the customer also enters the merchants' identification numbers, customer's account number with each merchant, and the amount and date of payment. If a telephone is used, the data is called back via voice response equipment or, if by computer, the data is transmitted back to the computer terminal screen. The customer then presses a designated key to confirm the transaction. Financial institutions complete the transaction by:

■ Transferring funds directly from the customers' account to the merchant accounts, if the accounts are in the same bank.

■ Transferring funds into a holding account and sending a check and printout to the merchants.

■ Transferring funds to the merchants' bank.

■ Transferring funds to a third party who then pays the merchant or utility.

In addition to financial services, some home banking systems include programs that offer such things as:

■ Stock brokerage services.

■ Home information services that allow electronic access to local and regional newspapers, classified ads, and airline, restaurant, theater and sporting event reservations.

■ Income tax preparation service.

INTERNAL CONTROLS FOR RETAIL EFT

Regardless of the system employed, financial institutions should ensure that adequate internal controls are in place to minimize errors, discourage fraud, and provide an adequate audit trail. Recommended internal control guidelines include:

For all systems:

■ Measures to establish proper customer identification (PINs) and maintenance of their confidentiality.

■ Issuance of a receipt to the customer as required by Regulation E.

■ Installing a dependable file maintenance and retention system to trace transactions.

■ Producing, reviewing and maintaining exception reports to provide an audit trail.

■ Requiring customers of each service to sign agreements that clearly define the responsibilities of the customer and the financial institution.

■ Producing and forwarding periodic customers' statements so they can review transactions made during the period and detect unauthorized transfers, as required by Regulation E.

■ Confidentiality and security of customer account information including protection of PINs.

■ Maintenance of contracts between bank and merchants, customer and banks, and banks and network.

■ Daily reconciliation of ATM machine transactions.

■ Policies and procedures regarding credit and check authorization, floor limits, override, settlement and balancing.

■ Maintenance of transaction journals to provide an adequate audit trail.

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- Generation and review of daily exception reports with provisions for follow-up of exception items.
 - Provisions for backup and contingency planning.
 - Adequate control of captured cards.
 - Physical security surrounding ATM terminals.

For transfer and bill paying systems:

- Allow customers to pay bills or transfer funds only from their accounts.
- Require that all transactions be preauthorized for specifically stated customer accounts.
- Discourage payments to third parties without written authorization.

The most critical element of EFT systems is the need for undisputed identification of the customer. Particular attention should be given to the customer identification systems. The most common control is the issuance of a unique PIN that is used with a plastic card or, for non-card systems, an account number. The following guidelines, as recommended by the American Bankers Association, are encouraged.

PIN CONTROL GUIDELINES

Storage

- Unissued PINs should never be stored before issuance. They should be calculated when issued and any temporary computer storage areas used in the calculation should be cleared immediately after use.
- PINs should be encrypted on all files and data bases.
- All file maintenance to PINs stored in databases should be restricted. Console logs and/or security reports should be reviewed to determine any attempts to subvert the PIN security system.

Delivery

- PINs should not appear in printed form where they can be associated with customers' account numbers.
- Bank personnel should not be able to retrieve or display customers' PIN numbers via terminals.
- PIN mailers should be processed and delivered with the same security accorded the delivery of bank cards to cardholders. (Note: PINs should never be mailed to a customer together with the card.)

Usage

- The PIN should be entered only by the card-holder and only in an environment that deters casual entry observation.
- The PIN should never be transmitted in unencrypted form.
- PIN systems should record the number of unsuccessful PIN entries and should restrict access to a customer's account after a small number of attempts.

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- If a PIN is forgotten, the customer should select a new one rather than having bank personnel retrieve the old one.

Control and security

- Systems should be designed, tested and controlled to preclude retrieval of stored PINs in any non-encrypted form.
- Application programs and other software containing formulas, algorithms, and data used to calculate PINs must be subject to the highest level of access for security purposes.
- Any data recording medium, e.g., magnetic tape and removable disks, used in the process of assigning, distributing, calculating or encrypting PINs must be cleared immediately after use.
- Employees with access to PIN information must be subject to security clearance and must be covered by an adequate surety bond. They should not be involved in card issuance operations in any way.

System design

- To limit fraud, PIN systems should be designed so that PINs can be changed without reissuance of cards.
- PINs used on interchange systems should be designed so that they can be used or changed without any modification to other participants' systems.
- Financial institutions electing to use encryption as a security technique for bank card systems are strongly encouraged to consider the Data Encryption Standards established by the National Bureau of Standards.

PLASTIC CARD CONTROL GUIDELINES

Procurement

- A written agreement between the card manufacturer and the financial institution should detail control procedures and methods of resolution to be followed if problems occur.
- Financial institutions should acquire the card manufacturer's latest third-party audit report.
- An investigation of the security devices used by the manufacturer when encoding and embossing the card should be conducted.

Embossing/Encoding

- If done by a vendor, similar precautions as detailed for card manufacturers should be considered, including written contracts and reviews of control procedures in effect.
- If done on site, the equipment should be maintained in an extremely secure area.
- Proper inventory controls over blank plastic card stock should be in place. There should be proper accounting for the number of cards used, including test cards and spoiled cards.

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- Separation and rotation of duties should be practiced to the extent practical and supervisory control reviews should be conducted on a periodic basis.

Storage

- Dual control procedures should be in place. Only a limited working supply of blank cards and cards in the process of being embossed/encoded should be allowed out of the dual custody. Adequate interim storage and accounting must exist for all cards not under dual control.
- Adequate controls should exist for captured cards.

Mailing

- Accountability controls should be created to ensure that all cards initially disbursed from the storage area are delivered to the mail area or are properly destroyed.
- Returned cards should be separately handled by a function independent of the mail department.
- Control cards should be mailed randomly to customers and their delivery validated within a few days to ensure that no theft has taken place.

TERMINAL SHARING/NETWORK SWITCHING

In an attempt to lower costs and provide widespread services, financial institutions share EFT facilities to process retail EFT services, primarily ATM and POS facilities. Some financial institutions are required by state law to share such facilities, while others voluntarily share them. EFT facilities are usually shared regionally; others voluntarily share them on a regional, nationwide and, in some cases, international basis. The most commonly shared EFT systems are:

- An EFT network formed and shared by different financial institutions.
- A multi-bank holding company network servicing affiliated banks.
- A single institution's proprietary EFT network shared with other institutions for a fee.

To facilitate use of the system, a switching network (switch) must be in place to allow shared terminals and computers to communicate with each other. The two types of switching networks used are:

- Line switching + messages are sent directly from one station to another when the central switching site establishes the connection. These systems are commonly used in real-time environments.
- Store and forward + The central switching site stores incoming messages and later retransmits the messages to their destination.

Control Requirements

The primary concerns in shared EFT facilities are security and confidentiality of customer data. These concerns become critical when the network, or any section of it, becomes inoperable or when line problems develop that interrupt the normal transfer of information through the switch. Therefore, adequate audit trails must exist for all transactions, at each switch point, identifying the originating terminal and destination.

Adequate procedures must be in place to control activity if the shared system becomes inoperable to ensure accurate posting and maintain security. Also, procedures for balancing and settling transactions should be well-documented and monitored for adherence. Each participant in the switch should receive adequate transaction journals and exception reports necessary to facilitate final settlement for their institution.

Agreements between switch or network participants must delineate each party's liabilities and responsibilities. Certain basic control items concerning normal and contingency processing must be detailed and responsibility for correction must be stated. Grievance procedures and arbitration policies should be established in order to resolve differences.

Reference is made to the Chapter 18 - Wholesale EFT for consideration of other retail EFT related concerns in the areas of input/output controls, encryption, backup, insurance, disaster recovery, and government regulations. For additional guidance also refer to the Federal Reserve's *Guide to the Federal Reserve's Payments System Risk Policy*.

300 SCOPE OF WORK

THE SCOPE OF INTERNAL AUDITING SHOULD ENCOMPASS THE EXAMINATION AND EVALUATION OF THE ADEQUACY AND EFFECTIVENESS OF THE ORGANIZATION'S SYSTEM OF INTERNAL CONTROL AND THE QUALITY OF PERFORMANCE IN CARRYING OUT ASSIGNED RESPONSIBILITIES.

.01 The scope of internal auditing work, as specified in this standard, encompasses what audit work should be performed. It is recognized, however, that senior management and the board provide general direction as to the scope of work and the activities to be audited.

.02 The purpose of the review for adequacy of the system of internal control is to ascertain whether the system established provides reasonable assurance that the organization's objectives and goals will be met efficiently and economically.

.1 Objectives are the broadest statements of what the organization chooses to accomplish. The establishment of objectives precedes the selection of goals and the design, implementation, and maintenance of systems whose purpose is to meet the organization's objectives and goals.

.2 Goals are specific objectives of specific systems and may be otherwise referred to as operating or program objectives or goals, operating standards, performance levels, targets, or expected results. Goals should be identified for each system. They should be clearly defined, measurable, attainable, and consistent with established broader objectives; and they should explicitly recognize the risks associated with not achieving those objectives.

.3 A system (process, operation, function, or activity) is an arrangement, a set, or a collection of concepts, parts, activities, and/or people that are connected or interrelated to achieve objectives and goals. (This definition applies to both manual and automated systems.) A system may also be a collection of subsystems operating together for a common objective or goal.

.4 Adequate control is present if management has planned and organized (designed) in a manner which provides reasonable assurance that the organization's objectives and goals will be achieved efficiently and economically. The system design process begins with the establishment of objectives and goals. This is followed by connecting or interrelating concepts, parts, activities, and/or people in such a manner as to operate together to achieve the established objectives and goals. If system design is properly performed, planned activities should be executed as designed and expected results should be attained.

.5 Reasonable assurance is provided when cost-effective actions are taken to restrict deviations to a tolerable level. This implies, for example, that material errors and improper or illegal acts will be prevented or detected and corrected within a timely period by employees in the normal course of performing their assigned duties. The cost-benefit relationship is considered by management during the design of systems. The potential loss associated with any exposure or risk is weighed against the cost to control it.

.6 Efficient performance accomplishes objectives and goals in an accurate and timely fashion with minimal use of resources.

.7 Economical performance accomplishes objectives and goals at a cost commensurate with the risk. The term efficient incorporates the concept of economical performance.

.03 The purpose of the review for effectiveness of the system of internal control is to ascertain whether the system is functioning as intended.

.1 Effective control is present when management directs systems in such a manner as to provide reasonable assurance that the organization's objectives and goals will be achieved.

.2 Directing involves, in addition to accomplishing objectives and planned activities, authorizing and monitoring performance, periodically comparing actual with planned performance, and documenting these activities to provide additional assurance that systems operate as planned.

a. Authorizing includes initiating or granting permission to perform activities or transactions. Authorization implies that the authorizing authority has verified and validated that the activity or transaction conforms with established policies and procedures.

b. Monitoring encompasses supervising, observing, and testing activities and appropriately reporting to responsible individuals. Monitoring provides an ongoing verification of progress toward achievement of objectives and goals.

c. Periodic comparison of actual to planned performance enhances the likelihood that activities occur as planned.

d. Documenting provides evidence of the exercise of authority and responsibility; compliance with policies, procedures, and standards of performance; supervising, observing, and testing activities; and verification of planned performance.

.04 The purpose of the review for quality of performance is to ascertain whether the organization's objectives and goals have been achieved.

.05 The primary objectives of internal control are to ensure:

.1 The reliability and integrity of information.

.2 Compliance with policies, plans, procedures, laws, regulations, and contracts.

.3 The safeguarding of assets.

.4 The economical and efficient use of resources.

.5 The accomplishment of established objectives and goals for operations or programs.

.06 A control is any action taken by management to enhance the likelihood that established objectives and goals will be achieved. Management plans, organizes, and directs the performance of sufficient actions to provide reasonable assurance that objectives and goals will be achieved. Thus, control is the result of proper planning, organizing, and directing by management.

.1 Controls may be preventive (to deter undesirable events from occurring), detective (to detect and correct undesirable events which have occurred), or directive (to cause or encourage a desirable event to occur).

.2 All variants of the term control (administrative control, internal accounting control, internal control, management control, operational control, output control, preventive control, etc.) can be incorporated within the generic term. These variants differ primarily in terms of the objectives to be achieved. Since these variants are useful in describing specific control applications, participants in the control process should be familiar with the terms as well as their applications. However, the methodology followed by internal auditors in evaluating such controls is consistent for all of the variants.

.3 The variant internal control came into general use to distinguish controls within an organization from those existing externally to the organization (such as laws). Since internal auditors operate within an organization and, among other responsibilities, evaluate management's response to

external stimuli (such as laws), no such distinction between internal and external controls is necessary. Also, from the organization's viewpoint, internal controls are all activities which attempt to ensure the accomplishment of the organization's objectives and goals. Internal control is considered synonymous with control within the organization.

.4 The overall system of control is conceptual in nature. It is the integrated collection of controlled systems used by an organization to achieve its objectives and goals.

.07 Management plans, organizes, and directs in such a fashion as to provide reasonable assurance that established objectives and goals will be achieved.

.1 Planning and organizing involve the establishment of objectives and goals and the use of such tools as organization charts, flowcharts, procedures, records, and reports to establish the flow of data and the responsibilities of individuals for performing activities, establishing information trails, and setting standards of performance.

.2 Directing involves certain activities to provide additional assurance that systems operate as planned. These activities include authorizing and monitoring performance, periodically comparing actual with planned performance, and appropriately documenting these activities.

.3 Management ensures that its objectives and goals remain appropriate and that its systems remain current. Therefore, management periodically reviews its objectives and goals and modifies its systems to accommodate changes in internal and external conditions.

.4 Management establishes and maintains an environment that fosters control.

.08 Internal auditors examine and evaluate the planning, organizing, and directing processes to determine whether reasonable assurance exists that objectives and goals will be achieved. Such evaluations, in the aggregate, provide information to appraise the overall system of internal control.

.1 All systems, processes, operations, functions, and activities within the organization are subject to the internal auditors' evaluations.

.2 Such evaluations should encompass whether reasonable assurance exists that:

a. Objectives and goals have been established.

b. Authorizing, monitoring, and periodic comparison activities have been planned, performed, and documented as necessary to attain objectives and goals.

c. Planned results have been achieved (objectives and goals have been accomplished).

.3 Internal auditors perform evaluations at specific points in time but should be alert to actual or potential changes in conditions which affect the ability to provide assurance from a forward-looking perspective. In those cases, internal auditors should address the risk that performance may deteriorate.

310 Reliability and Integrity of Information

Internal auditors should review the reliability and integrity of financial and operating information and the means used to identify, measure, classify, and report such information.

.01 Information systems provide data for decision making, control, and compliance with external requirements. Therefore, internal auditors should examine information systems and, as appropriate, ascertain whether:

.1 Financial and operating records and reports contain accurate, reliable, timely, complete, and useful information.

.2 Controls over record keeping and reporting are adequate and effective.

320 Compliance with Policies, Plans, Procedures, Laws, Regulations, and Contracts

Internal auditors should review the systems established to ensure compliance with those policies, plans, procedures, laws, regulations, and contracts which could have a significant impact on operations and reports, and should determine whether the organization is in compliance.

.01 Management is responsible for establishing the systems designed to ensure compliance with such requirements as policies, plans, procedures, applicable laws and regulations, and contracts. Internal auditors are responsible for determining whether the systems are adequate and effective and whether the activities audited are complying with the appropriate requirements.

.1 The term compliance refers to the ability to reasonably ensure conformity and adherence to organization policies, plans, procedures, laws, regulations, and contracts.

.2 The term compliance requirement refers to conditions established by management for the organization. The term also refers to conditions which may be imposed on the organization by law or regulation, or agreed to by contractual arrangement. These conditions affect the manner in which an organization's operations are conducted and objectives are achieved. Compliance requirements include those established, imposed, or agreed to for the purpose of safeguarding organization assets including prevention and/or detection of unauthorized acquisition, use, or disposition of resources.

.3 Management is responsible for having knowledge of compliance requirements of all laws, regulations, and contracts applicable to the organization which are significant to achieving internal control objectives set forth in Section 300.05 of the *Standards*.

.4 Management is responsible for designing and implementing policies, plans, and procedures, including those intended to comply with laws, regulations, and contracts.

a. The policies, plans, and procedures designed and implemented by management should be sufficient to reasonably ensure prevention and/or detection of noncompliance with applicable laws, regulations, and contracts that are significant to achieving internal control objectives. Significant noncompliance with laws, regulations, or contracts may constitute illegal acts, as described in Section 280 of the *Standards*. Significant noncompliance can also occur with respect to policies, plans, and procedures in which no law or regulation is involved.

b. Management is responsible for determining whether noncompliance brought to its attention by internal auditors, or by discovery, may violate laws, regulations, or contractual agreements, and/or constitute illegal acts. In addition, management is responsible for initiating such corrective actions necessary to achieve compliance. This may require reporting by management to the board and appropriate legal, funding, and/or regulatory authorities.

.5 In determining audit objectives, internal auditors should make inquiry regarding specific compliance requirements that are significant to internal control objectives. Internal auditors should consider inquiring about significant compliance requirements with:

a. Organization management having financial, operational, and oversight responsibilities.

b. Internal or external legal counsel.

c. Funding or contracting organizations.

d. Governmental or other regulatory authorities.

e. External auditors.

.6 Internal auditors are responsible for establishing objectives that include planning and performing a scope of work which provides a reasonable basis for reporting on the extent of organization compliance with policies, plans, procedures, laws, regulations, and contracts that are significant to internal control objectives.

.7 Internal auditors may perform additional procedures which provide insight with respect to compliance with laws, regulations, and contracts. Such performance may provide insight as to the existence and impact of exposure to significant instances of noncompliance.

.8 Internal auditors should promptly inform senior management and the board of all relevant facts when information gathered from the performance of internal auditing procedures indicates the existence of significant noncompliance or an unreasonable exposure to significant instances of noncompliance.

330 Safeguarding of Assets

Internal auditors should review the means of safeguarding assets and, as appropriate, verify the existence of such assets.

.01 Internal auditors should review the means used to safeguard assets from various types of losses such as those resulting from theft, fire, improper or illegal activities, and exposure to elements.

.02 Internal auditors, when verifying the existence of assets, should use appropriate audit procedures.

340 Economical and Efficient Use of Resources

Internal auditors should appraise the economy and efficiency with which resources are employed.

.01 Management is responsible for setting operating standards to measure an activity's economical and efficient use of resources. Internal auditors are responsible for determining whether:

.1 Operating standards have been established for measuring economy and efficiency.

.2 Established operating standards are understood and are being met.

.3 Deviations from operating standards are identified, analyzed, and communicated to those responsible for corrective action.

.4 Corrective action has been taken.

.02 Audits related to the economical and efficient use of resources should identify such conditions as:

.1 Underutilized facilities.

.2 Nonproductive work.

.3 Procedures which are not cost justified.

.4 Overstaffing or understaffing.

350 Accomplishment of Established Objectives and Goals for Operations or Programs

Internal auditors should review operations or programs to ascertain whether results are consistent with established objectives and goals and whether the operations or programs are being carried out as planned.

.01 Management is responsible for establishing operating or program objectives and goals, developing and implementing control procedures, and accomplishing desired operating or program results. Internal auditors should ascertain whether such objectives and goals conform with those of the organization and whether they are being met.

.1 The term operations refers to the recurring activities of an organization directed toward producing a product or rendering a service. Such activities may include, but are not limited to, marketing, sales, production, purchasing, human resources, finance and accounting, and governmental assistance. An operation's results may be measured against established objectives and goals which may include budgets, time or production schedules, and/or operating plans.

.2 The term programs refers to special purpose activities of an organization. Such activities include, but are not limited to, the raising of capital, sale of a facility, fund-raising campaigns, new product or service introduction campaigns, capital expenditures, and special purpose government grants. Special purpose activities may be short-term or long-term, spanning several years. When a program is completed, it generally ceases to exist. Program results may be measured against established program objectives and goals.

.3 Management is responsible for establishing criteria to determine if objectives and goals have been accomplished.

.4 Internal auditors should ascertain whether criteria have been established. If so, internal auditors should use such criteria for evaluation if they are considered adequate.

.5 If management has not established criteria, or if the established criteria, in the internal auditors' opinion, are less than adequate, internal auditors should report such conditions to the appropriate levels of management. Additionally, internal auditors may recommend appropriate courses of action depending on the circumstances.

.6 Internal auditors may recommend alternative sources of criteria to management, such as:

- a. Acceptable industry standards.
- b. Standards developed by professions or associations.
- c. Standards in law and government regulations.

.7 If adequate criteria are not established by management, internal auditors may still formulate criteria they believe to be adequate in order to perform an audit, form an opinion, and issue a report on the accomplishment of established objectives and goals.

.8 The internal auditors' evaluation of the accomplishment of established objectives and goals may be carried out with respect to an entire operation or program or only a portion of it. Audit objectives may include determining whether:

- a. The objectives and goals established by management for a proposed, new, or existing operation or program are adequate and have been effectively articulated and communicated.
- b. The operation or program achieves its desired level of interim or final results.

c. The factors which inhibit satisfactory performance are identified, evaluated, and controlled in an appropriate manner.

d. Management has considered alternatives for directing an operation or program which may yield more effective and efficient results.

e. An operation or program complements, duplicates, overlaps, or conflicts with other operations or programs.

f. Controls for measuring and reporting the accomplishment of objectives and goals are established and are adequate.

g. An operation or program is in compliance with policies, plans, procedures, laws, and regulations.

.9 Internal auditors should communicate the audit results to the appropriate levels of management. The report should state the criteria established by management and employed by internal auditors and disclose the nonexistence or inadequacy of any needed criteria. If internal auditors formulated criteria by which to measure the accomplishment of objectives and goals, the report should clearly state that internal auditors formulated the criteria and then present the audit results.

.02 Internal auditors can provide assistance to managers who are developing objectives, goals, and systems by determining whether the underlying assumptions are appropriate; whether accurate, current, and relevant information is being used; and whether suitable controls have been incorporated into the operations or programs.

400 PERFORMANCE OF AUDIT WORK

AUDIT WORK SHOULD INCLUDE PLANNING THE AUDIT, EXAMINING AND EVALUATING INFORMATION, COMMUNICATING RESULTS, AND FOLLOWING UP.

.01 The internal auditor is responsible for planning and conducting the audit assignment, subject to supervisory review and approval.

410 Planning the Audit

Internal auditors should plan each audit.

.01 Planning should be documented and should include:

.1 Establishing audit objectives and scope of work.

a. Audit objectives are broad statements developed by internal auditors and define intended audit accomplishments. Audit procedures are the means to attain audit objectives. Audit objectives and procedures, taken together, define the scope of the internal auditor's work.

b. Audit objectives and procedures should address the risks associated with the activity under audit. The term risk is the probability that an event or action may adversely affect the activity under audit. The guidelines contained in Sections 520.04.1 - .14 of the *Standards* should be used by internal auditors to assess risk for individual audit assignments.

c. The purpose of the risk assessment during the planning phase of the audit is to identify significant areas of the auditable activity.

.2 Obtaining background information about the activities to be audited.

a. A review of background information should be performed to determine the impact on the audit. Such items include:

- Objectives and goals.
- Policies, plans, procedures, laws, regulations, and contracts which could have a significant impact on operations and reports.
- Organizational information, e.g., number and names of employees, key employees, job descriptions, and details about recent changes in the organization, including major system changes.
- Budget information, operating results, and financial data of the activity to be audited.
- Prior audit working papers.
- Results of other audits, including the work of external auditors, completed or in process.
- Correspondence files to determine potential significant audit issues.
- Authoritative and technical literature appropriate to the activity.

b. Other requirements of the audit, such as the audit period covered and estimated completion dates, should be determined. The final audit report format should be considered, since proper planning at this stage facilitates writing the final audit report.

.3 Determining the resources necessary to perform the audit.

- a. The number and experience level of the internal auditing staff required should be based on an evaluation of the nature and complexity of the audit assignment, time constraints, and available resources.
- b. Knowledge, skills, and disciplines of the internal auditing staff should be considered in selecting internal auditors for the audit assignment.
- c. Training needs of internal auditors should be considered, since each audit assignment serves as a basis for meeting developmental needs of the internal auditing department.
- d. Consideration of the use of external resources in instances where additional knowledge, skills, and disciplines are needed.

.4 Communicating with all who need to know about the audit.

- a. Meetings should be held with management responsible for the activity being examined. Topics of discussion may include:

- Planned audit objectives and scope of work.
- The timing of audit work.
- Internal auditors assigned to the audit.
- The process of communicating throughout the audit, including the methods, time frames, and individuals who will be responsible.
- Business conditions and operations of the activity being audited, including recent changes in management or major systems.
- Concerns or any requests of management.
- Matters of particular interest or concern to the internal auditor.
- Description of the internal auditing department's reporting procedures and follow-up process.

- b. A summary of matters discussed at meetings and any conclusions reached should be prepared, distributed to individuals, as appropriate, and retained in the audit working papers.

.5 Performing, as appropriate, a survey to become familiar with the activities, risks, and controls to identify areas for audit emphasis, and to invite auditee comments and suggestions.

- a. A survey is a process for gathering information, without detailed verification, on the activity being examined. The main purposes are to:

- Understand the activity under review.
- Identify significant areas warranting special emphasis.
- Obtain information for use in performing the audit.
- Determine whether further auditing is necessary.

- b. A survey permits an informed approach to planning and carrying out audit work, and is an effective tool for applying the internal auditing department's resources where they can be used most effectively.

- c. The focus of a survey will vary depending upon the nature of the audit.

d. The scope of work and the time requirements of a survey will vary. Contributing factors include the internal auditor's training and experience, knowledge of the activity being examined, the type of audit being performed, and whether the survey is part of a recurring or follow-up assignment. Time requirements will also be influenced by the size and complexity of the activity being examined, and by the geographical dispersion of the activity.

e. A survey may involve use of the following procedures:

- Discussions with the auditee.
- Interviews with individuals affected by the activity, e.g., users of the activity's output.
- On-site observations.
- Review of management reports and studies.
- Analytical auditing procedures.
- Flowcharting.
- Functional "walk-thru" (tests of specific work activities from beginning to end).
- Documenting key control activities.

f. A summary of results should be prepared at the conclusion of the survey. The summary should identify:

- Significant audit issues and reasons for pursuing them in more depth.
- Pertinent information developed during the survey.
- Audit objectives, audit procedures, and special approaches such as computer-assisted audit techniques.
- Potential critical control points, control deficiencies, and/or excess controls.
- Preliminary estimates of time and resource requirements.
- Revised dates for reporting phases and completing the audit.
- When applicable, reasons for not continuing the audit.

.6 Writing the audit program.

a. Audit programs should:

- Document the internal auditor's procedures for collecting, analyzing, interpreting, and documenting information during the audit.
- State the objectives of the audit.
- Set forth the scope and degree of testing required to achieve the audit objectives in each phase of the audit.
- Identify technical aspects, risks, processes, and transactions which should be examined.
- State the nature and extent of testing required.
- Be prepared prior to the commencement of audit work and modified, as appropriate, during the course of the audit.

.7 Determining how, when, and to whom audit results will be communicated.

a. The director of internal auditing is responsible for determining how, when, and to whom audit results will be communicated. This determination should be documented and communicated to management, to the extent deemed practical, during the planning phase of the audit. Subsequent changes which affect the timing or reporting of audit results should also be communicated to management, if appropriate.

.8 Obtaining approval of the audit work plan.

a. Audit work plans should be approved in writing by the director of internal auditing or designee prior to the commencement of audit work.

b. Adjustments to audit work plans should be approved in a timely manner. Initially, approval may be obtained orally, if factors preclude obtaining written approval prior to commencing audit work.

420 Examining and Evaluating Information

Internal auditors should collect, analyze, interpret, and document information to support audit results.

.01 The process of examining and evaluating information is as follows:

.1 Information should be collected on all matters related to the audit objectives and scope of work.

a. Internal auditors use analytical auditing procedures when examining and evaluating information.

b. Analytical auditing procedures are performed by studying and comparing relationships among both financial and nonfinancial information.

c. The application of analytical auditing procedures is based on the premise that, in the absence of known conditions to the contrary, relationships among information may reasonably be expected to exist and continue. Examples of contrary conditions include unusual or nonrecurring transactions or events; accounting, organizational, operational, environmental, and technological changes; inefficiencies; ineffectiveness; errors; irregularities, or illegal acts.

d. Analytical auditing procedures provide internal auditors with an efficient and effective means of making an assessment of information collected in an audit. The assessment results from comparing such information with expectations identified or developed by the internal auditor.

e. Analytical auditing procedures are useful in identifying, among other things:

— Differences that are not expected.

— The absence of differences when they are expected.

— Potential errors.

— Potential irregularities or illegal acts.

— Other unusual or nonrecurring transactions or events.

f. Analytical auditing procedures may include:

— Comparison of current period information with similar information for prior periods.

— Comparison of current period information with budgets or forecasts.

— Study of relationships of financial information with the appropriate nonfinancial information (for example, recorded payroll expense compared to changes in average number of employees).

— Study of relationships among elements of information (for example, fluctuation in recorded interest expense compared to changes in related debt balances).

— Comparison of information with similar information for other organizational units.

— Comparison of information with similar information for the industry in which the organization operates.

g. Analytical auditing procedures may be performed using monetary amounts, physical quantities, ratios, or percentages.

h. Specific analytical auditing procedures include, but are not limited to, ratio, trend, and regression analysis, reasonableness tests, period-to-period comparisons, comparisons with budgets, forecasts, and external economic information.

i. Analytical auditing procedures assist internal auditors in identifying conditions which may require subsequent auditing procedures. Internal auditors should use analytical auditing procedures in planning the audit in accordance with the guidelines contained in Section 410 of the *Standards*.

j. Analytical auditing procedures should also be used during the audit to examine and evaluate information to support audit results. Internal auditors should consider the following factors in determining the extent to which analytical auditing procedures should be used:

— The significance of the area being examined.

— The adequacy of the system of internal control.

— The availability and reliability of financial and nonfinancial information.

— The precision with which the results of analytical auditing procedures can be predicted.

— The availability and comparability of information regarding the industry in which the organization operates.

— The extent to which other auditing procedures provide support for audit results.

After evaluating the aforementioned factors, internal auditors should consider and use additional auditing procedures, as necessary, to achieve the audit objective.

k. When analytical auditing procedures identify unexpected results or relationships, internal auditors should examine and evaluate such results or relationships.

l. The examination and evaluation of unexpected results or relationships from applying analytical auditing procedures should include inquiries of management and the application of other auditing procedures until internal auditors are satisfied that the results or relationships are sufficiently explained.

m. Unexplained results or relationships from applying analytical auditing procedures may be indicative of a significant condition such as a potential error, irregularity, or illegal act.

n. Results or relationships from applying analytical auditing procedures that are not sufficiently explained should be communicated to the appropriate levels of management. Internal auditors may recommend appropriate courses of action, depending on the circumstances.

.2 Information should be sufficient, competent, relevant, and useful to provide a sound basis for audit findings and recommendations.

- a. Sufficient information is factual, adequate, and convincing so that a prudent, informed person would reach the same conclusions as the auditor.
- b. Competent information is reliable and the best attainable through the use of appropriate audit techniques.
- c. Relevant information supports audit findings and recommendations and is consistent with the objectives for the audit.
- d. Useful information helps the organization meet its goals.

.3 Audit procedures, including the testing and sampling techniques employed, should be selected in advance, where practicable, and expanded or altered if circumstances warrant.

.4 The process of collecting, analyzing, interpreting, and documenting information should be supervised to provide reasonable assurance that the auditor's objectivity is maintained and that audit goals are met.

.5 Working papers that document the audit should be prepared by the auditor and reviewed by management of the internal auditing department. These papers should record the information obtained and the analyses made and should support the bases for the findings and recommendations to be reported.

- a. Audit working papers generally serve to:

- Provide the principal support for the internal audit report.
- Aid in the planning, performance, and review of audits.
- Document whether the audit objectives were achieved.
- Facilitate third-party reviews.
- Provide a basis for evaluating the internal auditing department's quality assurance program.
- Provide support in circumstances such as insurance claims, fraud cases, and lawsuits.
- Aid in the professional development of the internal auditing staff.
- Demonstrate the internal auditing department's compliance with the *Standards for the Professional Practice of Internal Auditing*.

- b. The organization, design, and content of audit working papers will depend on the nature of the audit. Audit working papers should, however, document the following aspects of the audit process:

- Planning.
- The examination and evaluation of the adequacy and effectiveness of the system of internal control.
- The auditing procedures performed, the information obtained, and the conclusions reached.
- Review.
- Reporting.
- Follow-up.

- c. Audit working papers should be complete and include support for audit conclusions reached.

- d. Among other things, audit working papers may include:

- Planning documents and audit programs.
- Control questionnaires, flowcharts, checklists, and narratives.
- Notes and memoranda resulting from interviews.
- Organizational data, such as organization charts and job descriptions.
- Copies of important contracts and agreements.
- Information about operating and financial policies.
- Results of control evaluations.
- Letters of confirmation and representation.
- Analysis and tests of transactions, processes, and account balances.
- Results of analytical auditing procedures.
- The audit report and management's responses.
- Audit correspondence if it documents audit conclusions reached.

e. Audit working papers may be in the form of paper, tapes, disks, diskettes, films, or other media. If audit working papers are in the form of media other than paper, consideration should be given to generating backup copies.

f. If internal auditors are reporting on financial information, the audit working papers should document whether the accounting records agree or reconcile with such financial information.

g. Some audit working papers may be categorized as permanent or carry-forward audit files. These files generally contain information of continuing importance.

h. The director of internal auditing should establish policies for the types of audit working-paper files maintained, stationery used, indexing and other related matters. Standardized audit working papers such as questionnaires and audit programs may improve the efficiency of an audit and facilitate the delegation of audit work.

i. The following are typical audit working-paper preparation techniques:

- Each audit working paper should contain a heading. The heading usually consists of the name of the organization or activity being examined, a title or description of the contents or purpose of the working paper, and the date or period covered by the audit.
- Each audit working paper should be signed (or initialed) and dated by the internal auditor.
- Each audit working paper should contain an index or reference number.
- Audit verification symbols (tick marks) should be explained.
- Sources of data should be clearly identified.

j. All audit working papers should be reviewed to ensure that they properly support the audit report and that all necessary auditing procedures have been performed. Evidence of supervisory review should be documented in the audit working papers. The director of internal auditing has overall responsibility for review but may designate appropriately experienced members of the internal auditing department to perform the review.

k. Evidence of supervisory review should consist of the reviewer initialing and dating each working paper after it is reviewed.

l. Other review techniques that provide evidence of supervisory review include completing an audit working-paper review checklist and/or preparing a memorandum specifying the nature, extent, and results of the review.

m. Reviewers may make a written record (review notes) of questions arising from the review process. When clearing review notes, care should be taken to ensure that the working papers provide adequate evidence that questions raised during the review have been resolved. Acceptable alternatives with respect to disposition of review notes are as follows:

— Retain the review notes as a record of the questions raised by the reviewer and the steps taken in their resolution.

— Discard the review notes after the questions raised have been resolved and the appropriate audit working papers have been amended to provide the additional information requested.

n. Audit working papers are the property of the organization.

o. Audit working-paper files should generally remain under the control of the internal auditing department and should be accessible only to authorized personnel.

p. Management and other members of the organization may request access to audit working papers. Such access may be necessary to substantiate or explain audit findings or to utilize audit documentation for other business purposes. These requests for access should be subject to the approval of the director of internal auditing.

q. It is common practice for internal and external auditors to grant access to each other's audit working papers. Access to audit working papers by external auditors should be subject to the approval of the director of internal auditing.

r. There are circumstances where requests for access to audit working papers and reports are made by parties outside the organization other than external auditors. Prior to releasing such documentation, the director of internal auditing should obtain the approval of senior management and/or legal counsel, as appropriate.

s. The director of internal auditing should develop retention requirements for audit working papers. These retention requirements should be consistent with the organization's guidelines and any pertinent legal or other requirements.

430 *Communicating Results*

Internal auditors should report the results of their audit work.

.01 A signed, written report should be issued after the audit examination is completed. Interim reports may be written or oral and may be transmitted formally or informally.

.1 Interim reports may be used to communicate information which requires immediate attention, to communicate a change in audit scope for the activity under review, or to keep management informed of audit progress when audits extend over a long period. The use of interim reports does not diminish or eliminate the need for a final report.

.2 Summary reports highlighting audit results may be appropriate for levels of management above the auditee. They may be issued separately from or in conjunction with the final report.

.3 The term signed means that the authorized internal auditor's name should be manually signed in the report. Alternatively, the signature may appear on a cover letter. The internal auditor authorized to sign the report should be designated by the director of internal auditing.

.4 If audit reports are distributed by electronic means, a signed version of the report should be kept on file in the internal auditing department.

.02 Internal auditors should discuss conclusions and recommendations at appropriate levels of management before issuing final written reports.

.1 Discussion of conclusions and recommendations is usually accomplished during the course of the audit and/or at post-audit meetings (exit interviews). Another technique is the review of draft audit reports by management of the auditee. These discussions and reviews help ensure that there have been no misunderstandings or misinterpretations of fact by providing the opportunity for the auditee to clarify specific items and to express views of the findings, conclusions, and recommendations.

.2 Although the level of participants in the discussions and reviews may vary by organization and by the nature of the report, they will generally include those individuals who are knowledgeable of detailed operations and those who can authorize the implementation of corrective action.

.03 Reports should be objective, clear, concise, constructive, and timely.

.1 Objective reports are factual, unbiased, and free from distortion. Findings, conclusions, and recommendations should be included without prejudice.

a. If it is determined that a final audit report contains an error, the director of internal auditing should consider the need to issue an amended report which identifies the information being corrected. The amended audit report should be distributed to all individuals who received the audit report being corrected.

b. An error is defined as an unintentional misstatement or omission of significant information in a final audit report.

.2 Clear reports are easily understood and logical. Clarity can be improved by avoiding unnecessary technical language and providing sufficient supportive information.

.3 Concise reports are to the point and avoid unnecessary detail. They express thoughts completely in the fewest possible words.

.4 Constructive reports are those which, as a result of their content and tone, help the auditee and the organization and lead to improvements where needed.

.5 Timely reports are those which are issued without undue delay and enable prompt effective action.

.04 Reports should present the purpose, scope, and results of the audit; and, where appropriate, reports should contain an expression of the auditor's opinion.

.1 Although the format and content of the audit reports may vary by organization or type of audit, they should contain, at a minimum, the purpose, scope, and results of the audit.

.2 Audit reports may include background information and summaries. Background information may identify the organizational units and activities reviewed and provide relevant explanatory information. They may also include the status of findings, conclusions, and recommendations from prior reports. There may also be an indication of whether the report covers a scheduled audit or the response to a request. Summaries, if included, should be balanced representations of the audit report content.

.3 Purpose statements should describe the audit objectives and may, where necessary, inform the reader why the audit was conducted and what it was expected to achieve.

.4 Scope statements should identify the audited activities and include, where appropriate, supportive information such as time period audited. Related activities not audited should be identified if necessary to delineate the boundaries of the audit. The nature and extent of auditing performed also should be described.

.5 Results may include findings, conclusions (opinions), and recommendations.

.6 Findings are pertinent statements of fact. Those findings which are necessary to support or prevent misunderstanding of the internal auditor's conclusions and recommendations should be included in the final audit report. Less significant information or findings may be communicated orally or through informal correspondence.

.7 Audit findings emerge by a process of comparing what should be with what is. Whether or not there is a difference, the internal auditor has a foundation on which to build the report. When conditions meet the criteria, acknowledgment in the audit report of satisfactory performance may be appropriate. Findings should be based on the following attributes:

- a. Criteria: The standards, measures, or expectations used in making an evaluation and/or verification (what should exist).
- b. Condition: The factual evidence which the internal auditor found in the course of the examination (what does exist).
- c. Cause: The reason for the difference between the expected and actual conditions (why the difference exists).
- d. Effect: The risk or exposure the auditee organization and/or others encounter because the condition is not the same as the criteria (the impact of the difference). In determining the degree of risk or exposure, internal auditors should consider the effect their audit findings may have on the organization's financial statements.
- e. Reported findings may also include recommendations, auditee accomplishments, and supportive information if not included elsewhere.

.8 Conclusions (opinions) are the internal auditor's evaluations of the effects of the findings on the activities reviewed. They usually put the findings in perspective based upon their overall implications. Audit conclusions, if included in the audit report, should be clearly identified as such. Conclusions may encompass the entire scope of an audit or specific aspects. They may cover, but are not limited to, whether operating or program objectives and goals conform with those of the organization, whether the organization's objectives and goals are being met, and whether the activity under review is functioning as intended.

.05 Reports may include recommendations for potential improvements and acknowledge satisfactory performance and corrective action.

.1 Recommendations are based on the internal auditor's findings and conclusions. They call for action to correct existing conditions or improve operations. Recommendations may suggest approaches to correcting or enhancing performance as a guide for management in achieving desired results. Recommendations may be general or specific. For example, under some circumstances, it may be desirable to recommend a general course of action and specific suggestions for implementation. In other circumstances, it may be appropriate only to suggest further investigation or study.

.2 Auditee accomplishments, in terms of improvements since the last audit or the establishment of a well-controlled operation, may be included in the audit report. This information may be necessary to fairly represent the existing conditions and to provide a proper perspective and appropriate balance to the audit report.

.06 The auditee's views about audit conclusions or recommendations may be included in the audit report.

.1 As part of the internal auditor's discussions with the auditee, the internal auditor should try to obtain agreement on the results of the audit and on a plan of action to improve operations, as needed. If the internal auditor and auditee disagree about the audit results, the audit report may state both positions and the reasons for the disagreement. The auditee's written comments may be included as an appendix to the audit report. Alternatively, the auditee's views may be presented in the body of the report or in a cover letter.

.07 The director of internal auditing or designee should review and approve the final audit report before issuance and should decide to whom the report will be distributed.

.1 The director of internal auditing or a designee should approve and may sign all final reports. If specific circumstances warrant, consideration should be given to having the auditor-in-charge, supervisor, or lead auditor sign the report as a representative of the director of internal auditing.

.2 Audit reports should be distributed to those members of the organization who are able to ensure that audit results are given due consideration. This means that the report should go to those who are in a position to take corrective action or ensure that corrective action is taken. The final audit report should be distributed to management of the auditee. Higher-level members in the organization may receive only a summary report. Reports may also be distributed to other interested or affected parties such as external auditors and the board.

.3 Certain information may not be appropriate for disclosure to all report recipients because it is privileged, proprietary, or related to improper or illegal acts. Such information, however, may be disclosed in a separate report. If the conditions being reported involve senior management, report distribution should be to the board of the organization.

440 Following Up

Internal auditors should follow up to ascertain that appropriate action is taken on reported audit findings.

.01 Internal auditors should determine that corrective action was taken and is achieving the desired results, or that senior management or the board has assumed the risk of not taking corrective action on reported findings.

.1 Follow-up by internal auditors is defined as a process by which they determine the adequacy, effectiveness, and timeliness of actions taken by management on reported audit findings. Such findings also include relevant findings made by external auditors and others.

.2 Responsibility for follow-up should be defined in the internal auditing department's written charter.

.3 Management is responsible for deciding the appropriate action to be taken in response to reported audit findings. The director of internal auditing is responsible for assessing such management action for the timely resolution of the matters reported as audit findings. In deciding the extent of follow-up, internal auditors should consider procedures of a follow-up nature performed by others in the organization.

.4 As stated in Section 110.01.6(c) of the *Standards*, senior management may decide to assume the risk of not correcting the reported condition because of cost or other considerations. The board should be informed of senior management's decision on all significant audit findings.

.5 The nature, timing, and extent of follow-up should be determined by the director of internal auditing.

.6 Factors which should be considered in determining appropriate follow-up procedures are:

- a. The significance of the reported finding.
- b. The degree of effort and cost needed to correct the reported condition.
- c. The risks that may occur should the corrective action fail.
- d. The complexity of the corrective action.
- e. The time period involved.

.7 Certain reported findings may be so significant as to require immediate action by management. These conditions should be monitored by internal auditors until corrected because of the effect they may have on the organization.

.8 There may also be instances where the director of internal auditing judges that management's oral or written response shows that action already taken is sufficient when weighed against the relative importance of the audit finding. On such occasions, follow-up may be performed as part of the next audit.

.9 Internal auditors should ascertain that actions taken on audit findings remedy the underlying conditions.

.10 The director of internal auditing is responsible for scheduling follow-up activities as part of developing audit work schedules.

.11 Scheduling of follow-up should be based on the risk and exposure involved, as well as the degree of difficulty and the significance of timing in implementing corrective action.

.12 The director of internal auditing should establish procedures to include the following:

- a. A time frame within which management's response to the audit findings is required.
- b. An evaluation of management's response.
- c. A verification of the response (if appropriate).
- d. A follow-up audit (if appropriate).
- e. A reporting procedure that escalates unsatisfactory responses/actions, including the assumption of risk, to the appropriate levels of management.

.13 Techniques used to effectively accomplish follow-up include:

- a. Addressing audit report findings to the appropriate levels of management responsible for taking corrective action.
- b. Receiving and evaluating management responses to audit findings during the audit or within a reasonable time period after the report is issued. Responses are more useful if they include sufficient information for the director of internal auditing to evaluate the adequacy and timeliness of corrective action.
- c. Receiving periodic updates from management in order to evaluate the status of management's efforts to correct previously reported conditions.
- d. Receiving and evaluating reports from other organizational units assigned responsibility for procedures of a follow-up nature.
- e. Reporting to senior management or the board on the status of responses to audit findings.

General Description of Functions in Plastic Card Operations

Plastic Card Functions at Aval Bank are concentrated in the Credit Card Division of the bank. There are seven departments in this division: Marketing, Interbank & International Relations, Information Processing, Plastic Card Transactions, Monitoring, ATM Support and Technical Support. Refer to the attachment IV c for an organizational chart broken down by functions performed by each department.

Marketing plans and carries out the overall market strategy for attracting new plastic card customers and merchants as clients and initiates contracts with merchants, corporate salary projects and for ATM placement. Interbank & International Relations provides liaison and settlements with the major international card payment systems. Information Processing handles card issuing and agreements with corporations and individual cardholders and replenishment of accounts. Plastic Card Transactions handles settlements with merchants, financial institutions, payment systems, ATMs, affiliated banks, and joint projects. Monitoring provides 24-hour customer service, and handles overdrafts and manages merchant activities. ATM Support handles ATM cash replenishment and maintenance of ATMs. Technical Support supports software in the division, the card personalization process, database management and updates, and processing of charges and adjustments.

The Ukrainian Processing Center (UPC) a private company with majority control exercised by the bank, handles systems for monitoring ATMs, points of sale (POS) and payment systems clearing for Aval Bank and its Credit Card Division.

Major activities are (1) debit and credit card accounts, (2) ATMs, (3) merchants' credit card business, and (4) salary payment systems.

As of August 31, 2000, Bank Aval had 102 ATMs and approximately 140,000 cardholders and 3,000 merchants. Cardholders are both debt and credit cardholder, although the debit cardholders balances are much greater by comparison. The bank uses a single account system for cardholders: if the account has a debit balance, it is in effect a debit card and if it has a credit balance, it is a credit card, with credit limits regulated by the most recent agreement with the bank.

For example, for debit cardholders with Bank Aval, totals were as follows:

| | |
|----------------|--------------------|
| August 1, 2000 | Hrivna 156,299,327 |
| July 1, 2000 | Hrivna 146,666,351 |
| April 1, 2000 | Hrivna 104,294,242 |

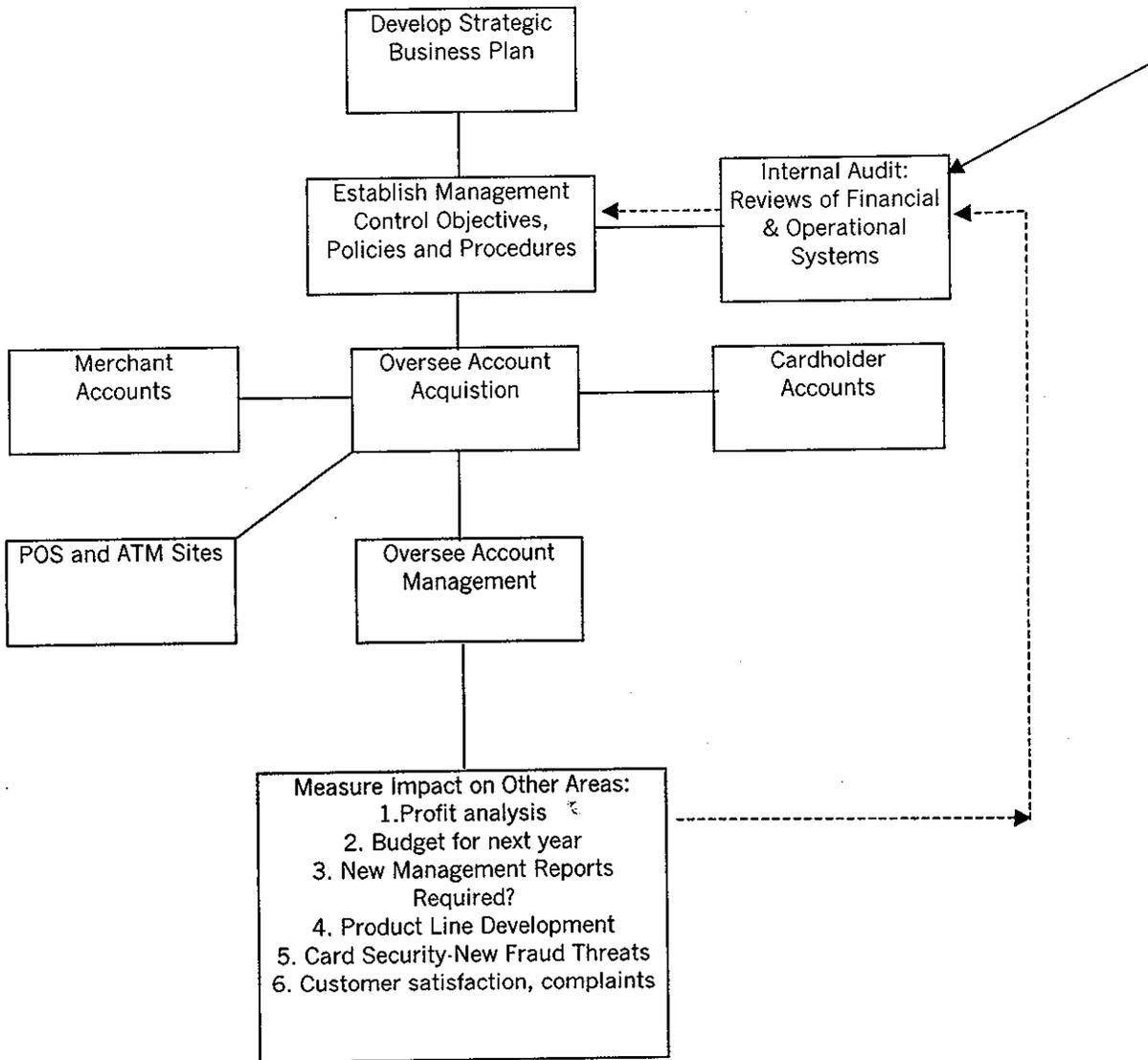
By comparison, for individual credit cardholders with Bank Aval, totals were as follows:

| | |
|----------------|------------------|
| August 1, 2000 | Hrivna 2,380,142 |
| July 1, 2000 | Hrivna 2,378,243 |
| April 1, 2000 | Hrivna 1,081,246 |

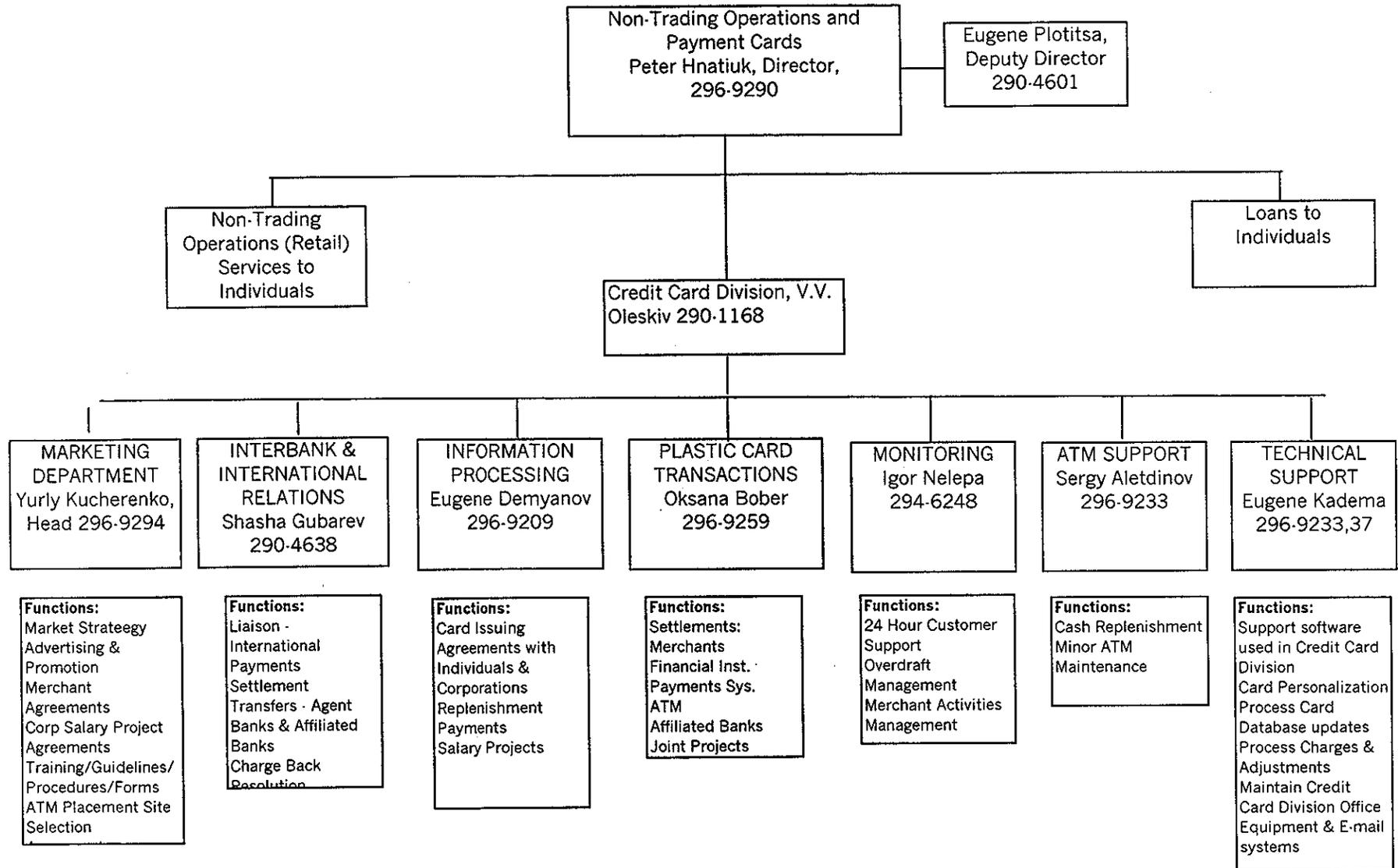
Bank Aval has agreements with most of the international payment systems such as Visa, Mastercard, Cirrus/Maestro, and Europay International. It implements settlements for bank affiliates who are members of Europay International.

Bank Aval intends to promote more business in the plastic card area in the future. It is therefore important that this area of its business is supported by sound systems of financial control. Effective internal audit is indispensable to quality assurance in this area. The audit programs developed as part of this project are owned by the Bank's Internal Audit Department. They have been designed and tested with their participation and through cooperation with them and with the Credit Card Division. The Credit Card Division hopes to gain increased efficiencies through effective audit and evaluation of its financial systems.

Plastic Card Management Process



**Current Organizational Structure of the Non-Trading Operations and
Payment Cards Division of Aval Bank as of August 27,
2000**



**List of Technology Cards Relating to Plastic Card Transactions Received from the
Credit Card Division for each of its Departments' Operations**

| <i>No.</i> | <i>Dept.</i> | <i>Title</i> |
|------------|--------------|--|
| 96 | PCT | ATM Operation |
| 99 | ATMS | On ATMs |
| 102 | TECHS | Payment Card System Administrator Job Description |
| 101 | TECHS | Personalization of Plastic Cards |
| 98 | MON | 24 Hour Cardholder Service Regulation |
| 105A | MON | Monitoring Dept. Charter |
| 105 | MON | AVAL Bank Regulation on Plastic Card Overdrafts |
| 104 | MKT | Sale and Sign up Sale of Plastic Cards |
| 125 | IP | Information Processing Department |
| 103 | IP | Processing of Payrolls Received via E-mail (Salary Projects) |
| 95 | PCT | Settlements with Payment Systems |
| 97 | PCT | Settlements with Merchants |
| 133 | PCT | Settlements on VISA-UMC Cards |
| 134 | PCT | Settlements with Affiliated Banks Europay Members |
| 90 | IREL | Bonus Payment for Seizure Finding of Plastic Cards |
| 91 | IREL | Chargebacks |

Internal Control Checklist for the Plastic Card Division ATM Activity

The Name of the Department _____
 Submitted by _____
 Meeting with _____
 Meeting with _____
 Meeting with _____
 Other information reviewed _____

| # | Description | Yes/No | Comments |
|---|---|--------|----------|
| 1 | ATM Agreements A. Has the Division developed a standard ATM agreement? B. Has the Division developed a standard agreement for all commercial customers who wish to use the system for POS transaction processing? C. Does the Division have adequate agreements with the servicer for all ATM networks to which it belongs? D. If the Division relies on a vendor to provide ATM card and PIN services, does it have an adequate agreement with the vendor limiting the institution's liability? | | |
| 2 | Organizational Procedures A. Does the organization chart set out key positions and depict the supervisory and reporting responsibilities? B. Are there job descriptions for each position in the department, which establish the duties of the position, the reporting responsibility and the qualifications needed to adequately perform the duties? C. Do technological cards cover all procedures and are they in accordance to with NBU procedures? | | |
| 3 | ATM Systems A. Do ATMs log each transaction processed? B. Does the log contain the following: a. Written confirmation of all previous periods of employment? b. ATM identification number? c. Sequential control number? d. Debit/credit account numbers? e. Day/time of the transaction? C. Are two employees required | | |
| 4 | Servicing ATMs A. Are two employees required to service the ATM? B. Are ATMs serviced and balanced at least daily? | | |
| 5 | ATM Accounts and Reports A. Are settlement accounts with the network balanced and reconciled daily? B. Are outstanding reconciling items followed up and resolved in a timely manner? | | |

| | | | |
|---|---|--|--|
| | <ul style="list-style-type: none"> C. Are exception reports generated daily and items resolved in a timely manner? D. Are ATM daily withdrawal limits set at a reasonable level? | | |
| 6 | <p>Security of ATM cards and PINs</p> <ul style="list-style-type: none"> A. Are PINs stored on the ATM, central computer and/or card encrypted? B. Are customers allowed to transfer funds only between their own accounts or, for bill-paying services, only to an account authorized in writing? C. Do all switching networks, ATM card servicers, etc. provide the institution with an annual service auditor's report indicating an adequate internal control environment? D. Are blank ATM cards stored in a secure location? E. Are the embossing/encoding functions for ATM cards performed in a secure area? F. Are returned cards and PINs handled by separate departments? G. Are PINs and the encryption programs adequately secured against retrieval? H. Do ATM systems capture a card after a low number of invalid PINs? | | |
| 7 | <p>Employee screening and termination</p> <ul style="list-style-type: none"> A. Are employees with access to PIN information subject to pre-employment/pre-assignment screening prior to assignment to the position? B. Do pre-employment/pre-screening requirements for ATM card servicing positions require at least the following: <ul style="list-style-type: none"> a. Credit check through national and local credit reporting organizations? b. Fingerprinting and a criminal records check through the national bureau investigating such areas? c. Written confirmation of all previous periods of employment? C. Are written procedures enforced specifying that, upon notification of termination or intention to terminate, the ATM manager will ensure that the employee is: <ul style="list-style-type: none"> a. Relieved of all duties involving ATM functions and assigned to non-sensitive duties? b. Immediately terminated with appropriate severance pay, with further access to the premises to be as a visitor and controlled as such? D. Upon termination, are passwords and user ids assigned to the employee changed? E. Upon termination, does the personnel/human resources department: <ul style="list-style-type: none"> a. Brief the employee on his or her continuing legal responsibility to maintain the confidentiality of information in the employee's possession after termination of employment? b. Have the employee executed a termination agreement signifying his or her understanding and acceptance of these responsibilities? | | |

Банк «Аваль»

Наименование Департамента _____

Подготовил _____

С кем проведена беседа _____

С кем проведена беседа _____

С кем проведена беседа _____

Прочая рассмотренная информация _____

| Шаг | Описание | Да/Нет | Комментарии |
|-----|----------|--------|-------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |

Internal Control Checklist for the Plastic Card Division Merchant Activity Department

The Name of the Department _____
 Submitted by _____
 Meeting with _____
 Meeting with _____
 Meeting with _____
 Other information reviewed _____

| # | Description | Yes/No | Comments |
|---|---|--------|----------|
| 1 | Organization of Merchant Activity Department A. Does the Department have a Charter B. Is the Charter approved by the Bank's Board of Directors C. Is there an organization chart for the department D. Does the organization chart setout key positions and depict the supervisory and reporting responsibilities. E. Are there job descriptions for each position in the department, which establish the duties of the position, the reporting responsibility and the qualifications needed to adequately perform the duties? | | |
| 2 | Merchant Relations: A. Are all merchants required to enter into a merchant agreement B. Does the merchant agreement set-forth: <ul style="list-style-type: none"> • Rate of Commission • Charge limits • Validation and identification procedures for cardholders • List of POS terminals C. Is there a standard schedule of commission rates and charge limits approved by the head of the plastic card division D. Are all merchants assigned a primary customer relations officer in the bank to monitor merchant performance and provide customer service E. Do deviations from the standard commission schedule in merchant agreements require the approval of the head of the plastic card division F. Are all merchants required to maintain settlement accounts at the bank and are minimum balances established to cover possible charge-backs G. Does the reporting system disclose other business transactions between the merchant and the bank such as loan or other deposit accounts | | |
| 3 | Merchant Operations and Processing: A. Are merchants entered into the internal processing system (IPS) by someone separate from the individual approving the merchant agreement B. Are charge limits entered into the IPS so that merchants exceeding their limits are identified | | |

| | | | |
|-----------------|--|--|--|
| | <p>C. If charges are received from the CPU for merchants not in the IPS, are such charges recorded to a clearing account and listed for follow-up and resolution by the division manager</p> <p>Are technological cards prepared to describe processing procedures and are they approved by senior management</p> | | |
| <p>4</p> | <p>Merchant Settlement and Reporting:</p> <p>A. Are settlement entries to the merchant's account made by someone other than the individual approving the merchant agreement?</p> <p>B. Are technological cards prepared to describe settlement procedures and are they approved by senior management</p> <p>C. Are commissions and fees accrued during the period earned and recognition not deferred until settlement date</p> <p>D. Are charge-backs immediately debited to the merchant's settlement account and communicated to the merchant for resolution</p> <p>E. Is merchant activity suspended if a debit balance occurs in the settlement account due to excessive charge-backs</p> <p>F. Do merchants receive a detailed statement of credit card activity at least monthly</p> <p>G. Are merchant activity reports reviewed at least monthly by a senior manager in the department who is separate from the client relations officer to verify compliance with the merchant agreement and determine profitability of the merchant account.</p> | | |

Банк «Аваль»
Вопросник по рассмотрению структуры и функций
департамента пластиковых карточек.
Деятельность Торговцев.

Наименование Департамента _____

Подготовил _____

С кем проведена беседа _____

С кем проведена беседа _____

С кем проведена беседа _____

Прочая рассмотренная информация _____

| Шаг | Описание | Да/Нет | Комментарии |
|-----|---|--------|-------------|
| 1 | <p>Организация Департамента по работе с Торговцами</p> <p>А. Имеется ли Положение о Департаменте?</p> <p>Б. Утверждено ли Положение Правлением банка?</p> <p>В. Существует ли структура департамента?</p> <p>Г. Описывает ли организационная структура основные должности, обязанности и порядок отчетности?</p> <p>Д. Существует ли описание выполняемых работ для каждого работника отдела, его должностных обязанностей, порядок отчетности и необходимая квалификация для выполнения этих обязанностей?</p> | | |
| 2 | <p>Взаимоотношения Торговцев:</p> <p>А. Всем ли Торговцам необходимо заключать соглашения с Банком?</p> <p>Б. Описывает ли торговое соглашение следующее:</p> <ul style="list-style-type: none"> • Комиссионную ставку • Ограничение по платежам • Процедуры утверждения и определения Держателей пластиковых карт • Список POS терминалов <p>В. Существует ли стандартная таблица комиссионных ставок и ограничений по платежам, утвержденная Руководителем данного департамента?</p> <p>Г. Все ли Торговцы работают непосредственно с сотрудниками банка для мониторинга результатов деятельности Торговца и оказания услуг клиенту?</p> <p>Д. Необходимо ли одобрение Главы Департамента пластиковых карт в случае отклонения комиссионных ставок от тех, которые описаны в таблице?</p> <p>Е. Всем ли Торговцам необходимо иметь счет в банке? Описаны (указаны) ли минимальные остатки на счёте Торговца в случае наличия опротестованных сумм?</p> | | |

| | | | |
|---|--|--|--|
| | <p>Ж. Отражает ли существующая система отчетности прочие операции между Торговцем и банком, например, кредитные или депозитные счета?</p> | | |
| 3 | <p>Операции Торговцев и обработка данных:</p> <p>А. Внесены ли Торговцы во внутреннюю систему обработки данных (ВСОД) сотрудником, который не отвечает за утверждение торгового соглашения?</p> <p>Б. Внесены ли ограничения по платежам в ВСОД, так чтобы превышение лимита можно было определить?</p> <p>В. В случае получения информации (отчётов) из УПЦ по Торговцам, которые ещё не находятся в ВСОД, такие платежи должны быть занесены на клиринговый счет и записаны для проверки (принятия решения) менеджером департамента.</p> <p>Г. Существуют ли технологические карты, подготовленные для описания процедур и одобренные Руководством?</p> | | |
| 4 | <p>Расчеты с Торговцами и отчетность:</p> <p>А. Все ли проводки записаны на счет Торговца сотрудником, не отвечающим за утверждение торгового соглашения?</p> <p>Б. Существуют ли технологические карты, подготовленные для описания процедур расчетов и одобренные Руководством?</p> <p>В. Начислялись ли комиссионные и сборы в течение отчетного периода и не было ли их признание отложено до расчётной даты?</p> <p>Г. Занесены ли опротестованные суммы на расчетный счет Торговца? Осведомлен ли об этом сам Торговец?</p> <p>Д. Приостанавливались ли операции по счетам Торговца в случае дебетового остатка, причиной которого послужили многочисленные случаи опротестованных сумм?</p> <p>Е. Получают ли Торговцы детальный отчет об их деятельности по обслуживанию пластиковых карточек, не менее одного раза в месяц?</p> <p>Ж. Анализируются ли отчеты о деятельности Торговцев Руководителем департамента по крайней мере раз в месяц, который не принимает участия в работе с клиентами? Это необходимо для определения соответствий с условиями соглашения между Банком и Торговцем, а также для определения прибыльности по счету Торговца.</p> | | |

Internal Control Checklist for the Plastic Card Division Cardholder Activity Department

The Name of the Department _____
 Submitted by _____
 Meeting with _____
 Meeting with _____
 Meeting with _____
 Other information reviewed _____

| # | Description | Yes/No | Comments |
|---|---|--------|----------|
| 1 | <p>Organization of Cardholder Activity Department</p> <p>F. Does the Department have a Charter?</p> <p>G. Is the Charter approved by the Bank's Board of Directors?</p> <p>H. Is there an organization chart for the department?</p> <p>I. Is there sufficient separation of duties including the separation of duties of authorization of new cards, credit limits from address changes and from reconciling the database files? Is the reconciliation of the changes to the maintenance report independent from the inputting of the data? Is the responsibility for charge backs and the investigation of fraud independent of the responsibility of the issuance of new cards and maintenance files.</p> <p>J. Does the organization chart setout key positions and depict the supervisory and reporting responsibilities?</p> <p>K. Are there job descriptions for each position in the department, which establish the duties of the position, the reporting responsibility and the qualifications needed to adequately perform the duties?</p> <p><u>L. Do technological cards exist for the procedures and are they in accordance to with NBU procedures?</u></p> <p><u>M. Do the technological cards comply with the agreements with the credit/debit/ATM card companies?</u></p> | | |
| 2 | <p>Cardholder Relations:</p> <p>H. Is it necessary for all Holders to conclude and sign an agreement with the Bank?</p> <p>I. <u>Do the cardholder agreements set-forth:</u></p> <ul style="list-style-type: none"> • Terms of issuing a plastic card • Fee for various types of plastic cards and method of paying and timing of paying the fee. • • Credit and withdrawal limits • Method for replenishment of the card account (cash / non-cash) • Validation and identification procedures for Cardholder • Terms of replenishment of the guarantee deposits, agreements, contract of maintenance of minimum balances • Monthly statements to inform the Holder on the card transactions and balance of his account | | |

| | | | |
|---|--|--|--|
| | <ul style="list-style-type: none"> • Instructions concerning separation of passwords from cards • Requirement for signature by the staff approving the card and the cardholder who thus confirms having accepted the terms of agreements. • Appropriate information concerning steps to be taken in case of lost or stolen cards or incorrect or fraudulent charges. • Conditions resulting in cancellation of the card. • Interest rate and calculation of interest. • Customer service contact (if not included in regular deposit account system) <p>J. Is there a standard schedule of fees and withdrawal and credit limits approved by the head of the Plastic card division (Chief of the Board)?</p> <p>K. Are all cardholders required to maintain settlement accounts at the bank and are minimum deposit balances established for certain cardholders? and on the basis of what kind of documents?</p> <p>L. Does the internal reporting system disclose other business transactions between the cardholder and the Bank such as loan or other deposit accounts</p> <p>M. Is there a policy of notifying denied or accepted applications for cards or changes in credit within a reasonable amount of time.</p> | | |
| 3 | <p>Does the existing software satisfy the following, namely:</p> <p>A. Accounting of transactions (synthetic & analytical);</p> <p>B. Realization / Implementation of reconciliation of daily transaction report to accruals of fees, interest charges, merchant file, deduction from deposits. Is the data from the UPC reconciled to the accounting (ODB).</p> <p>C. Obtaining of summary (<i>consolidate</i>) information about the accounts of separate customers (<i>one Client</i>);</p> <p>D. Possibility of creation of ad hoc reports. E. Storage of the information on activity of the holders - creation of a Database (Reports UPC, statement on the account, control tapes with ATM, appropriate certificates (acts) etc.).</p> <p>F. A report that highlights overdue credit balances.</p> <p>N. A report that reconciles daily debit using debit cards and the related debits from the accounts.</p> <p>H. Is a daily maintenance report of client information produced that highlights card changes (new cards, address changes, changes in limits, closures) and is this report reconciled to the source documents by someone independent of the person responsible for agreeing to the changes and inputting the data.</p> | | |
| 4 | <p>Cardholder Operations and Processing:</p> <p>D. Are Cardholders entered into the internal processing system (IPS) by someone separate from the individual approving the Cardholder agreement ?</p> <p>E. Are charge limits entered into the IPS so that Cardholders exceeding their limits are identified?</p> <p>F. If reports are received from the UPC for Cardholders not in the IPS, are such payments recorded to a clearing account and listed for checking and adopting a decision by the division manager?</p> <p>G. Whether at once information on granting of the new credit (established limit of crediting) under plastic cards is entered in IPS, namely:</p> <ul style="list-style-type: none"> • Type of card ; • Credit or withdrawal limits | | |

| | | | |
|--|---|--|--|
| | <ul style="list-style-type: none"> • Interest Rate • Whether the card is valid internationally or not? <p>H. Condition of payment.</p> <p>I. Are there proper procedures for authorising credit limits in accordance with the Bank's general credit policy?</p> <p>J. Whether there is a technique of definition of credit status of the card holder, a regular system of flagging and reviewing accounts according to the credit status definitions of overdue debt and formation of reserves for bad debt for credit cards?</p> <p>K. Are there adequate restrictions concerning staff access to the cardholder databases (only relevant staff can access the database</p> <p>L. Are credit card transactions immediately added to the cardholder's account?</p> <p>M. Are there sufficient procedures to notify a cardholder when he/she is over his/her limit?</p> <p>N. Are there sufficient procedures in place concerning credit card disputes, reporting of loss and stolen cards or fraudulent use of cards. (Immediate halt on the cards for the latter three).</p> | | |
|--|---|--|--|

Банк «Аваль»
Вопросник по рассмотрению структуры и функций
департамента пластиковых карточек.
Деятельность Держателей пл./карточек.

Наименование Департамента _____

Подготовил _____

С кем проведена беседа _____

С кем проведена беседа _____

С кем проведена беседа _____

Прочая рассмотренная информация _____

| Шаг | Описание | Да/Нет | Комментарии |
|-----|--|--------|-------------|
| 1 | <p>Организация управления по работе с Держателями</p> <p>А. Имеется ли Положение об управлении (отделе)?</p> <p>Б. Утверждено ли Положение Правлением банка?</p> <p>В. Существует ли структура управления (отдела)?</p> <p>Г. Описывает ли организационная структура ключевые должности, обязанности и порядок отчетности?</p> <p>Д. Существует ли описание выполняемых работ для каждого сотрудника отдела, его должностных обязанностей, порядок отчетности и необходимая квалификация для выполнения этих обязанностей?</p> | | |
| 2 | <p>Взаимоотношения Держателей:</p> <p>А. Всем ли Держателям необходимо заключать соглашения с Банком?</p> <p>Б. Описывает ли это соглашение следующее:</p> <ul style="list-style-type: none"> • Сроки выдачи пл./карточки? • Комиссионные ставки по типам пл./карточек? • Валюта авторизации? • Ограничение по платежам (превышение расходного лимита при проведении операции)? • Метод пополнение карточного счета (наличный / безналичный)? • Процедуры утверждения и определения Держателя пластиковой карты? • Сроки пополнения гарантийного депозита, согласно, Договора обеспечения (гарантийное покрытие)? • Ежемесячно информировать Держателя о состоянии его счёта (предоставление выписок по счёту(ам))? <p>В. Существует ли стандартная таблица (тарифы) комиссионных ставок и ограничений по платежам и предоставляемых услуг утвержденная Руководителем Банка (или Руководителем данного управления)?</p> | | |

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| | <p>Г. Все ли Держатели работают с непосредственным сотрудником банка для мониторинга результатов деятельности Держателя(ей) и оказанию услуг клиентам?</p> <p>Д. Необходимо ли одобрение Главы Департамента пластиковых карт или Председателя Правления Банком, в случае отклонения комиссионных ставок от тех, которые описаны в тарифах Банка?</p> <p>Е. Всем ли Держателя необходимо иметь счет в банке? Указаны / Оговариваются ли минимальные остатки по счетам Держателей в случае наличия опротестованных сумм? На основании какого документа?</p> <p>Ж. Отражает ли существующая система отчетности прочие операции между Держателем и Банком (кредитные или депозитные счета)?</p> | | |
| 3 | <p>Удовлетворяет ли существующее Программное обеспечение следующим показателям:</p> <ul style="list-style-type: none"> • Учёт операций (синтетический и аналитический); • Проведение выверки; • Формирование сводной информации по счетам отдельного Держателя; • Возможность формирования финансовой отчётности по необходимым / требуемым критериям; • Хранение информации по деятельности Держателей – создание Базы данных (Отчётов УПЦ, выписок по счетам, контрольных лент с банкоматов, соответствующих актов и т.д.). | | |
| 4 | <p>Операции Держателей и обработка данных:</p> <p>А. Внесены ли Держатели во внутреннюю систему обработки данных (ВСОД) сотрудником, который не отвечает за утверждение требуемых соглашений?</p> <p>Б. Внесены ли ограничения по платежам в ВСОД, так чтобы превышение лимита можно было определить?</p> <p>В. В случае получения информации / отчётов из УПЦ об опротестованных суммах по Держателям, которые ещё не находятся в ВСОД, такие платежи должны быть занесены на клиринговый счет и записаны для проверки (принятия решения) менеджером департамента.</p> <p>Г. Сразу ли вводится информация о выдаче нового кредита (установление лимита кредитования) под пластиковые карточки в ВСОД, а именно:</p> <ul style="list-style-type: none"> • Вид; • Лимит кредитования; • Процентная ставка; • Условия уплаты. <p>Д. Существуют ли технологические карты, подготовленные для описания процедур и одобренные Руководством?</p> <p>Е. Существует ли методика предоставления кредитов (установление лимита кредитования) под пластиковые карточки?</p> <p>Ж. Существует ли методика определения кредитоспособности Держателя и формирования резервов по кредитам под кредитные карточки?</p> <p>З. Проводится ли исполнителями ежедневная сверка по операциям держателей?</p> <p>И. Осуществляется ли независимая проверка информации о</p> | | |

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| | <p>Клиентах (Держателях) на полноту и правильность?</p> <p>К. Установлен ли запрет для исполнителей на право корректировки информации (реквизитов) о Клиенте (Держателе) в ОДБ?</p> | | |
| 5 | <p>Расчеты с Торговцами и отчетность:</p> <p>А. Все ли проводки занесены на счет Держателя или списаны с его счёта сотрудником, который не отвечает за утверждение требуемых соглашений между Банком и Держателем?</p> <p>Б. Существуют ли технологические карты, подготовленные для описания процедур расчетов и одобренные Руководством?</p> <p>В. Начислялись ли комиссионные и процентные доходы (сборы) в течение отчетного периода и не было ли их признание отложено до расчётной даты?</p> <p>Г. Занесены ли опротестованные суммы на расчетный счет Держателя? Осведомлен ли об этом Держатель?</p> <p>Д. Приостанавливались ли операции по счетам Держателей в случае дебетового остатка, причиной которого послужили многочисленные случаи опротестованных сумм или непогашения кредита?</p> <p>Е. Получают ли Держатели детальный отчет об их деятельности при использовании пластиковой карточки не в сети Банка, не менее одного раза в месяц?</p> <p>Ж. Осуществляется ли контроль правильности подгрузки / поступления данных, по проведённым операциям, в ОДБ Отделом учёта и контроля по пластиковым карточкам Департамента бухгалтерского учёта и отчётности?</p> <p>З. Анализируются ли отчеты о деятельности Держателей Руководителем департамента, по крайней мере, раз в месяц, который не принимает участия в работе с ними? Это необходимо для определения соответствий с условиями соглашения между Банком и Держателем. для определения прибыльности по счетам Держателей и прибыльности Банка от обслуживания Держателей.</p> | | |

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AVAL BANK
Audit program
Plastic cards operations: cash withdrawal through ATM.

1. To insure completeness and adequacy of an ATM-related Technological procedures in the Plastic cards department. Compliance of the procedures with the NBU regulating documents and Payment Systems requirements.
2. To insure reasonable control over the access to ATM.
3. To insure that reconciliation of balances (turnovers) on deposit and loan accounts is in place when withdrawing cash through ATM.
4. Evaluate procedures for withdrawal of plastic cards from circulation and procedures on storage; to provide for the description of the indicated procedures in Technological cards.
5. To insure reliability of ATM operation. Frequency of ATM failures / deficiencies upon usage of plastic cards.

| Step | Description | Done by | Working paper, reference |
|------|--|---------|--------------------------|
| 1. | <p>A. Obtain the list of all available (registered) ATMs in the Plastic Cards department as of 31.12.99 including the following:</p> <ul style="list-style-type: none"> • ATM number assigned by the Bank; • Address; • Number of transactions conducted in the reporting month/period; • Turnover in the reporting month / period; • ATM last unload date; • Date of planned ATM loading. <p>B. Verify that the number of ATMs listed (see par_1A) corresponds to the actual number of ATMs. Reconcile Database information to the accounting data in the Intrabank transactions department.</p> | | 1 |
| 2. | <p>A. Based on the list obtained, use Excel Random Selection Macro Spreadsheet on the Audit Grid File to generate a random sample of ten percent of ATMs, as of a recent date. This will be used for further verification of transactions conducted through ATMs in the sample. Follow the Instructions Spreadsheet to generate the the random selection. Build a selection table on the following criteria from the Transmaster Database for this purpose:</p> <ul style="list-style-type: none"> • ATM number assigned by the Bank; • Address; • Number of transactions in the reporting period / cycle; • Turnover in the reporting period / cycle; • Commission income received by the Bank; • Indicate number of ATM failures; • Reasons of failures, discovered by Plastic Cards department staff. <p>B. From the sample of ATM selected in par_2A above, prepare a list with the following information (as the statistic data) using the data filter on Excel:</p> <ul style="list-style-type: none"> • Total number of ATMs; • Number of ATMs selected; | | |

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| | <ul style="list-style-type: none"> • Number of transactions conducted via all ATMs in the reporting month; • Number of transactions conducted via selected ATMs in the reporting month; • Turnover in the reporting month / period on all ATMs; • Turnover in the reporting month / period on selected ATMs; • Cover ratio; <p>C. Obtain the schedule (time-table) of loading / unloading of cartridges on all of ATMs from the Plastic cards Department.</p> <p>D. Based on the schedule (par_2C above) and ATM transactions register, to verify the terms of loading / unloading of selected ATMs, (On the basis of the following documents: cash journal, check register, ATM control tapes and cash documents for the amount of transactions conducted through ATM).</p> <p>E. Check up process of loading / unloadings ATM (check on places 1-2 ATM) and their conformity to the Technological procedures.</p> | | |
| 3. | <p>A. To reconcile balances on acc._1004 with the Daily comprehensive statements from the UPC on transactions carried out through ATMs (by one operational day on selected ATMs).</p> <p>B. To reconcile reports on ATMs, received from the UPC with the Database information of the Bank, by one operational cycle on selected ATMs and to present the information in the table format:</p> <ul style="list-style-type: none"> • Total amount on transactions (turnover); • Total number of transactions undertaken; • Transaction Date (cash withdrawal through ATM); • Settlement Date (cover was booked); • Amount of commission income received by the Bank; • Date, commission income was received on acc. 6110 | | |
| 4. | <p>A. To determine an error rate and frequency of ATM breakdowns, to identify reasons and trouble-shooting actions that are taken by the Bank. Once an ATM cycle is over, reconciled/actual data on all transactions through ATM need to be entered into ODB.</p> <p>B. To review/assess actions of the Bank upon an ATM failure together with measures taken on behalf of the Ukrainian Processing Center (UPC) to resolve the problem</p> | | |
| 5. | <p>A. A method used by UPC to get an updated ODB version should be stated together with frequency the ODB is being upgraded at.</p> | | |
| 6. | <p>To analyze/evaluate the activity of a particular department with respect to the lost/stolen plastic cards.</p> <p>Namely:</p> <ul style="list-style-type: none"> • The availability of Technological chart (flow-chart) describing the process for card withdrawal. • Storage of cards. • Card annulment. • Return to the real cardholder • Real cardholder identification (description of required documents and respective procedures). | | |

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**АППБ «Аваль»
Программа аудита.**

**Операции с использованием пластиковых карточек при снятии денег
через Банкомат.**

1. Убедиться в полноте и завершённости Технологических процедур по работе с Банкоматами в департаменте пластиковых карт. Их соответствии Регламентирующим документам НБУ и Платёжных систем.
2. Убедиться в надлежащем контроле доступа к Банкомату.
3. Убедиться в том, что существует и производится выверка остатков (оборотов) по депозитным или кредитным счетам при проведении операций через Банкомат.
4. Произвести оценку (оценить) процедур(ы) по изъятию из обращения пластиковых карточек и их хранению, а также удостовериться в том, что данные процедуры описаны в Технологических картах.
5. Убедиться в надёжности процесса работы Банкоматов. Частота возникновения сбоев/недостатков в процессе работы Банкоматов при использовании пластиковых карточек.

| Шаг | Описание | Исполнитель | Ссылка на рабочие документы |
|-----|---|-------------|---|
| 1. | <p>А. Получить в Департаменте пластиковых карточек список имеющихся (зарегистрированных) банкоматов, за 31.12.99, в виде:</p> <ul style="list-style-type: none"> • Номер клише, присвоенный Банком; • Адрес; • Количество произведённых операций за отчётный месяц; • Оборот за отчётный месяц / период; • Дата последней выгрузки; • Дата планируемой загрузки. <p>Б. Убедиться в том, что количество представленных в списке (см. п._1А) банкоматов соответствует действительности. Сверить информацию в Базе данных с данными учёта в отделе внутрибанковских операций.</p> | | <p align="center">АТМ - 1</p> |
| 2. | <p>А. Из списка банкоматов методом случайной выборки с использованием макроса случайной выборки данных, сделать 10% выборку за один из последних проверки/сверки операций, произведённых через них, и представить в виде таблицы на основании следующих параметров, взятых из базы данных программы Трансмастер:</p> <ul style="list-style-type: none"> • Номер банкомата; • Адрес; • Количество произведённых операций за отчётный период (цикл); • Оборот за отчётный период (цикл); • Сумма полученных комиссий; • Указать количество сбоев в работе банкомата; • Причина сбоев, выявленная работниками данного управления. <p>Б. Из выборки пункт 2А с использованием фильтра Excel подготовить список со следующими данными (как статистические данные):</p> <ul style="list-style-type: none"> • Общее количество банкоматов; | | <p align="center">АТМ - 2</p> <p align="center">АТМ - 2/1</p> |

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| | <ul style="list-style-type: none"> • Количество выбранных; • Количество произведённых операций за отчётный месяц по всем банкоматам; • Количество произведённых операций за отчётный месяц по выбранным банкоматам; • Оборот за отчётный месяц/период по всем банкоматам; • Оборот за отчётный месяц/период по выбранным банкоматам; • Процент покрытия; <p>В. Получить в Департаменте пластиковых карточек список периодичности загрузки/выгрузки кассет по выбранным банкоматам.</p> <p>Г. На основании списка пункт 2 В периодичности загрузки/выгрузки банкоматов и журнала учёта работы банкоматов проверить соблюдение сроков загрузки/выгрузки отобранных банкоматов, (На основании имеющихся приходных и расходных кассовых ордеров, контрольных лент и расходных ордеров на сумму операций совершённых через банкомат).</p> <p>Д. Очной проверкой (проверкой на местах по 1-2 банкоматам) проверить процесс загрузки/выгрузки банкоматов и его соответствие имеющимся Технологическим процедурам.</p> | | <p>ATM – 2/2</p> |
| <p>3.</p> | <p>А. Произвести сверку остатков по сч_1004 с Ежедневными детальными выписками УПЦ по операциям, проведённым через банкомат (за один день работы по выбранным банкоматам).</p> <p>Б. Произвести сверку отчётов по банкоматам, полученным от УПЦ при использовании пл./карточек с информацией в Базе данных Банка, за один цикл работы по выбранным банкоматам, данную информацию представить в виде таблицы:</p> <ul style="list-style-type: none"> • Общая сумма по операциям (оборот); • Общее количество произведённых операций; • Дата операции (снятия денег через банкомат); • Дата расчёта с Банком (зачисления покрытия); • Сумма комиссионных полученных Банком; • Дата получения комиссионных на сч_6110; | | |
| <p>4.</p> | <p>А. Определить частоту недостатков, сбоев в работе банкоматов, их причины и принимаемые Банком меры по устранению результатов нарушения работы банкоматов.</p> <p>По окончании цикла работы банкомата в ОДБ должны поступить сверенные/реальные данные по всем операциям , проведёных через него.</p> <p>Б. Проанализировать/Оценить действия Банка при прерывании процесса (нарушений в работе банкомата), а также принимаемые меры со стороны УПЦ, чтобы разрешить возникшие проблемы в течение этого времени.</p> | | |
| <p>5</p> | <p>А. Следует отметить метод, с помощью которого УПЦ получает версию обновлённой базы данных и частота её обновления.</p> | | |
| <p>6.</p> | <p>Проанализировать / Оценить работу данного департамента с утерянными / украденными пл./карточками.</p> <p>А именно:</p> <ul style="list-style-type: none"> • Наличие необходимой Технологической карты описывающей процес изъятия карточки; • Хранения карточки; • Уничтожения карточки; • Возврат карточки реальному владельцу; • Идентификация личности реального владельца (описание необходимых документов и соответствующих процедур). | | |

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Aval Bank
Audit program for Plastic Card Department
Cardholder Activity Section

1. Verify that Cardholders listed as being active (i.e. with credit cards outstanding or clients that have used debit or cash cards in the last year) clients on the audit date have valid Cardholder agreements and there are no card transactions being conducted with cardholders not having valid agreement.
2. Verify that transactions with Cardholders during the period are being settled accurately, on a timely basis, and in accordance with the Cardholder agreement.
3. Verify that the accounting for Cardholders transactions, including fee and interest income, is being properly recorded in the financial reports and in accordance with the established technological procedures of the Bank.
4. Verify that plastic cards are being issued to cardholders in accordance with established technological procedures of the Bank.
5. Verify that loans to individual cardholders are granted in accordance with the bank's loan policy, that the balance of loans outstanding as of the audit date accurately reflects the amounts due the bank by cardholders and that the reserve for credit losses applicable to these loans is adequate.
6. Verify that charges protested by the cardholder are being flagged in the account, are being charged back to the correct vendor and that adequate procedures are in place to resolve the protested item.
7. Verify that proper procedures for reported fraud, or lost and stolen cards and issuance of new cards and closings are followed according to NBU and the agreements with the credit/debit/ATM card companies.

| Step | Description | Done by | Working paper, reference |
|------|--|---------|--------------------------|
| | Review / update of current procedures: A. Update / complete the internal control checklist for the Cardholder Activity Section; B. Review the relevant Charter(s) and Technological cards (TCs). Evaluate the adequacy of these procedures, their accordance with NBU directives and agreements with the credit/debit/ATM card companies and make recommendations as appropriate; C. Draw up flow charts for the following areas (decision of whether to make just five flowcharts or more will depend upon procedures and decision by the auditor drawing the flowcharts as to what would be the most efficient). D. 1) Issuance of new cards E. 2) Routine monthly bookings to cards (interest, payments, withdrawals, transactions sent in by UPC and the related accounting and reconciliation. F. 3) Process for unusual occurrences (reporting of fraud, charge backs, and complaints). G. 4) Closing or withdrawal of cards including lost and stolen cards. H. 5) Overdue credit card accounts. I. Retain copies of the department organizational chart, charter(s) TCs and flowcharts and internal control checklist as they will form part of the permanent file for this area. | | |

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| 1. | <p>From the list of Cardholders as of for a recent date, use Excel Random Selection Macro Spreadsheet on the Audit Grid File to generate a random sample of cardholders for detail testing as follows:</p> <p>A. For credit cardholders, select 3 blocks of 5 cardholders, from each credit card class (i.e. VISA, EC/MC, Cirrus/Maestro)</p> <p>B. For debit-only cardholders selects 10 blocks of 5 cardholders.</p> <p>C. Select a sample of five new credit and debit cards that have been authorised and issued in the period.</p> <p>D. Calculated the percent that the number of cardholder accounts in the sample is of the total accounts (sample coverage) and if possible the percentage of the new cards authorised sample is of the total new cards authorised.</p> | | |
| 2. | <p>From the sample of cardholders selected in 1(A) (i.e. credit) above, prepare a list with the following information:</p> <p>J. Type of Card</p> <p>K. Cardholder number and name</p> <p>L. Credit limit</p> <p>M. Card fee</p> <p>N. Loan Interest rate</p> <p>O. Aval credit officer approving agreement and date.</p> <p>P. Loan balance as of November 30, 1999.</p> | | |
| 3. | <p>Perform the following procedures on this list prepared in step 2 above:</p> <p>A. Compare the above information to the agreement on file and list any exceptions.</p> <p>B. Confirm that the credit officer approving the agreement was authorized to approve the agreement and the agreement complied with the bank's credit policy and the credit card companies' policy.</p> <p>C. Confirm that pending charge-backs have been properly segregated in the account and bank procedures are being followed to remedy disputed items.</p> <p>D. Compare the cardholder loan balance to the list of outstanding cardholder loans as of November 30, 1999.</p> <p>E. Check for credit that is overdue, over the authorised credit limit or contravenes the repayment agreement.</p> <p>F. Send confirmation of loan balances to the client using the positive confirmation form.</p> <p>G. Ensure that card renewal was in accordance with authorised credit procedures.</p> <p>H. Ensure that the last issuance of annual (biannual?) replacement cards was in accordance with proper procedures.</p> <p>I. Ensure that any extension of credit complied with the Bank's and the credit card companies' credit policies.</p> <p>J. Check any changes (address changes, etc) are in the cardholder database and track to the daily maintenance file and that there is proof of a reconciliation of this report to the source documents</p> | | |
| 4. | <p>From the sample of debit cardholders selected in 1(B) above, prepare a list with the following information:</p> <p>Q. Type of Card</p> <p>R. Cardholder number and name</p> <p>S. Withdraw limit</p> <p>T. Card fee</p> <p>U. Aval officer approving agreement and date of approval</p> <p>V. Balance in deposit account as of November 30, 1999.</p> | | |
| 5 | <p>Perform the following procedures on this list prepared in step 4 above:</p> <p>A. Compare the information to the agreement on file and list any exceptions.</p> <p>B. Confirm that the officer approving the agreement was authorized to approve the agreement and the agreement complied with the bank's debit card</p> | | |

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| | <p>procedures.</p> <p>C. Compare the cardholder deposit account balance to the list of individual deposits as of November 30, 1999.</p> <p>D. If the cardholder withdraws have exceeded the deposit balance, determine that the overdraft has been authorized and/or a hold has been placed on future card withdraws.</p> <p>E. Confirm that pending charge-backs have been properly segregated in the account and bank procedures are being followed to remedy disputed items</p> <p>F. Send confirmation of cardholder information to the client using the negative confirmation form,</p> <p>G. Ensure that the last issuance of annual (biannual?) replacement card was in accordance with proper procedures.</p> <p>H. Ensure that any extension of the withdrawal limit complied with the Bank's and the debit card companies' policies.</p> <p>J. Check any changes (address changes, etc) are in the cardholder database and track to the daily maintenance file and that there is proof of a reconciliation of this report to the source documents.</p> | | |
| 6. | <p>For the sample of newly authorised cards selected in step 1C prepare a list with the following information:</p> <p>W. Type of Card</p> <p>X. Cardholder number and name</p> <p>Y. Withdrawal or credit limit</p> <p>Z. Card fee</p> <p>AA. Aval officer approving agreement and date of approval</p> | | |
| 7. | <p>For the above,</p> <p>A. Ensure that the cards were authorised according to the proper credit deposit account procedures, i.e. a check on credit worthiness of applicant.</p> <p>B. Ensure that the card and password were issued following proper procedure, i.e. applicant shows appropriate ID when picking up the card and that same employee does not have access to password and card before issuance.</p> <p>C. Ensure that NBU and credit/debit and cash card companies directives are being met.</p> <p>D. Ensure that applicant and an authorised officer of the Bank have signed the agreement and that the file contains data documenting the ID used to confirm the identity of the cardholder.</p> <p>E. Ensure that client signature cards and client address data is retained in the file.</p> <p>F. Check that appropriate (daily new cardholder report?) report has been updated in the cardholder database and that there is proof of a reconciliation of this report to the new cardholders files or agreements.</p> | | |
| 8. | <p>From the sample of cardholders selected in Step 1 above, randomly select one cardholder from each block of 5 and obtain the transaction activity in the account for the month of November. Confirm the following:</p> <p>A. That fee and interest income were charged to the account in accordance with the cardholder agreement and recorded in the operating day in the proper period.</p> <p>B. That transactions in the accounts, including charge-backs, were settled accurately and on a timely basis.</p> | | |
| 8. | <p>Randomly select 5 reports of complaint from the period and the preceding period from cardholders re incorrect charges and check the follow ups made by the appropriate departments and that charge back was made when necessary in a proper and timely basis.</p> | | |
| 9. | <p>Randomly select 5 reports from the period and the month preceding concerning fraudulent use of cards and check follow up made by the appropriate</p> | | |

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| | departments. Was an immediate halt put on the card number? Was contact made with the appropriate other banks? Was an attempt made to discover and report to the police the perpetrator of the fraud? Was the proper correction made to the cardholder's account? | | |
| 10. | Randomly select a sample of 5 reported lost and stolen cards from the period and the preceding month and ensure that the NBU directives and credit/debit/ATM card company agreements have been followed. Ensure that an immediate halt has been put on the card and if the staff checked whether the password could also have been available to the thief or anyone finding the card. | | |
| 11. | Randomly select a sample of 3 credit cards and debit cards that were closed in the period and verify that and a halt on the card numbers has been input into the systems on a timely basis. Record the reason for the closure of the account and follow up on anything unusual. Check the closings to the cardholder database and track to the daily maintenance file and that there is proof of a reconciliation of this report to the source documents. | | |
| 12. | For the month of November, calculate the average yield on the outstanding credit card loans (Account # 6041) and compare to the average interest rate on the credit cards in the sample. Comment on any unreasonable difference. | | |
| 13. | Obtain a listing of past due credit card loans as of November 30, 1999, and an estimate of the required loan loss reserve from the plastic card department. Verify that any past due loans included in the credit card sample are also included in this listing and that the reserve complies with NBU regulations and is adequate to provide for estimated losses in the loan portfolio. | | |
| 14. | From the CPU report for two days in November, select a random sample of 10 cardholders, not included in the sample in (1) above, from each card issuer and verify that: A. the transactions for that day have been posted to the cardholders account B. That the cardholder has a valid cardholder agreement. | | |
| 15 | Obtain a list of credit card loans written-off for during the six months ended November 30, 1999. Verify that these accounts were included in the write-offs recorded to Account # 9611 | | |

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АКБ «Аваль»
Программа аудита. Отдел пластиковых карт.
Операции с Держателями пластиковых карт.

1. Убедиться, что Держатели, находящиеся в списке активных клиентов (т.е. клиенты, которым выданы кредитные карточки, или которые использовали дебетовые или кредитные карточки в течение прошлого года) на дату аудита, имеют в наличии действующий договор. Проверить, что операции с пластиковыми картами не проводятся с Держателями, у которых нет действующего договора на дату проведения аудита.
2. Убедиться, что расчеты по операциям с Держателями пластиковых карт за соответствующий период проведены правильно, вовремя и в соответствии с договором.
3. Убедиться, что учет операций с Держателями, включая операции по сборам (комиссионным) и процентному доходу, в финансовых отчетах выполнен правильно и в соответствии с существующими технологическими процедурами Банка.
4. Убедиться, что выпуск пластиковых карт выполняется в соответствии с технологическими процедурами банка.
5. Убедиться, что кредиты физическим лицам предоставляются в соответствии с кредитной политикой банка, и что остатки по выпущенным кредитам на дату аудита точно отражают сумму к выплате Держателю пластиковой карты, а также резервы под кредитные риски адекватны.
6. Убедиться, что опротестованные Держателем суммы были отражены на каком-либо счете и в последствии переведены на правильный счет Торговца. Также, проверить наличие необходимых процедур для решения проблем, связанных с опротестованными суммами.
7. Убедиться, что надлежащие процедуры по фактам мошенничества, утерянным и похищенным карточкам, эмиссии и закрытию карточек осуществляются согласно требованиям НБУ и соглашениям, заключенным с компаниями-эмитентами кредитных/дебетовых и прочих карточек для банкоматов.

| Шаг | Описание | Исполнитель | Ссылка на рабочие документы |
|-----|---|-------------|-----------------------------|
| | <p>Проверить / обновить текущие процедуры:</p> <p>А. Обновить/завершить Вопросник по внутреннему контролю (операции с Держателями);</p> <p>Б. Проанализировать соответствующие Положения о департаменте и Технологические карты (ТК). Оценить достаточность/правильность этих процедур, их соответствие требованиям НБУ, а также условиям соглашений с компаниями-эмитентами кредитных/дебетовых и прочих карточек для банкоматов и, при необходимости, сделать рекомендации;</p> <p>В. Составить блок-схемы следующих процессов (решение о необходимом количестве блок-схем будет зависеть от существующих процедур, а также от личного мнения аудитора, который их составляет, руководствуясь соображениями наибольшей очевидности блок-схем):</p> <ol style="list-style-type: none">1) Выдача новых карт;2) Рутинные ежемесячные проводки по карточным счетам (проценты, платежи, снятия со счета, операции, данные по | | |

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| | <p>которым поступают от UPC, соответствующие бухгалтерские проводки и квитанция сумм);</p> <p>3) Действия в случае нестандартных ситуаций (мошенничество, чарджбеки, жалобы клиентов)ж</p> <p>4) Закрытие или изъятие карточек, включая утерянные и украденные карточки;</p> <p>5) Просроченные счета кредитных карточек.</p> <p>Г. Обеспечить сохранность документов, описывающих организационную структуру департамента, Положения о департаменте, ТК, блок-схем и вопросников по внутреннему контролю, которые будут использованы для составления Постоянного файла этого направления деятельности Банка.</p> | | |
| <p>1.</p> | <p>Из списка Держателей по состоянию на последнюю отчетную дату, используя документ/функцию Excel, позволяющую осуществлять случайную выборку данных, представленных в виде электронной таблицы, выполнить случайную выборку для последующего детального теста:</p> <p>А. Для держателей только кредитных карт выберите 3 группы, состоящих из пяти держателей из каждого класса кредитных карт (VISA, EC/MC, Cirrus/Maestro)</p> <p>Б. Для держателей только дебетовых карт выберите 10 групп, состоящих из пяти держателей.</p> <p>В. Провести выборку пяти новых кредитных и дебетовых карточек, авторизованных и выданных за данный период</p> <p>Г. Рассчитайте процентное соотношение выборки к общему числу держателей (<i>покрытие выборки</i>) и, если возможно, процентное отношение выборки по новым авторизованным карточкам к общему числу карточек, авторизованных за последний период.</p> | | |
| <p>2.</p> | <p>Из выборки, описанной в шаге 1(A), подготовьте список со следующей информацией:</p> <ol style="list-style-type: none"> 1. Тип карты 2. Номер и имя держателя карты 3. Лимит кредитования 4. Комиссионные 5. Процентная ставка по кредиту 6. Ответственный сотрудник банка «Аваль», одобрявший соглашение 7. Остаток по кредитам на 30 ноября 1999. | | |
| <p>3.</p> | <p>Выполнить следующие процедуры, используя информацию, перечисленную в шаге 2.</p> <p>А. Сравнить вышеперечисленную информацию с соглашением в файле и вынести все различия.</p> <p>Б. Убедиться, что сотрудник банка, утверждающий соглашение, имеет на это соответствующие полномочия и соглашение соответствует кредитной политике банка, а также политике компаний-эмитентов кредитных карточек.</p> <p>В. Убедиться, что невыполненные опротестованные суммы были правильно отображены на счете и проблемы решены, используя существующие процедуры банка.</p> <p>Г. Сравнить остатки по кредитам со списком кредитов выданных держателям состоянием на 30 ноября 1999.</p> <p>Д. Отследить просроченные кредиты, кредиты, превышающие</p> | | |

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| | <p>лимиты кредитования или же противоречащие соглашению о погашении.</p> <p>Е. Отослать письма подтверждения об остатках по кредитам клиенту, используя форму позитивного подтверждения.</p> <p>Ж. Убедиться, что обновление карточки прошло в соответствии с утвержденными кредитными процедурами.</p> <p>З. Убедиться, что последний выпуск годовых (двухлетних?) замещающих карточек был выполнен согласно надлежащим процедурам.</p> <p>И. Убедиться, что любое предоставление кредита происходило в соответствии с кредитной политикой банка и компаний по выпуску кредитных карточек.</p> <p>К. Зарегистрировать любые изменения (изучить изменения) в базе данных Держателей; проследить за их внесением в ежедневный файл-сопровождение. Убедиться, что существует контроль за сверкой данного отчета/файла с исходными документами.</p> | | |
| 4. | <p>Из выборки держателей дебитных карт, описанной в пункте 1(Б), подготовьте список со следующей информацией.</p> <ol style="list-style-type: none">1. Тип карты2. Номер держателя и имя3. Предельная сумма при снятии денег со счета4. Комиссионные5. Ответственный сотрудник банка «Аваль», одобрявший соглашение6. Остаток на депозитных счетах состоянием на 30 ноября 1999 | | |
| 5 | <p>Выполнить следующие процедуры, используя информацию, перечисленную в шаге 4:</p> <p>А. Сравнить вышеперечисленную информацию с соглашением в файле и вынести все различия.</p> <p>Б. Убедиться, что сотрудник банка, утверждающий соглашение, имел на это соответствующие полномочия, соглашение соответствует процедурам банка по операциям с дебитными картами.</p> <p>В. Сравнить остатки на депозитных счетах со списком депозитов физических лиц состоянием на 30 ноября 1999.</p> <p>Г. Если предельная сумма снятия со счета превышает остаток, необходимо убедиться, что превышение было одобрено и/или операции будут предоставлены на снятие денег в будущем</p> <p>Д. Убедиться, что невыполненные опротестованные суммы были правильно определены на счете и проблемы решены, используя процедуры банка.</p> <p>Е. Отослать письма подтверждения об остатках по кредитам клиенту, используя форму негативного подтверждения</p> <p>Ж. Убедиться, что последний выпуск годовых (двухлетних?) замещающих карточек был выполнен согласно надлежащим процедурам.</p> <p>З. Убедиться, что любое назначение предельной суммы при снятии денег со счета происходило согласно политике банка и компаний по выпуску дебитных карточек.</p> <p>И. Зарегистрировать любые изменения (изучить изменения) в базе данных Держателей; проследить за их внесением в</p> | | |

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| | ежедневный файл-сопровождение. Убедиться, что существует контроль за сверкой данного отчета/файла с исходными документами. | | |
| 6. | Из выборки новых авторизованных карточек, описанной в шаге 1(B), подготовьте список со следующей информацией: 1) Тип карты 2) Номер и имя держателя карты 3) Предельный лимит суммы при снятии денег или лимит кредитования 4) Комиссионные 5) Ответственный сотрудник банка «Аваль», одобрявший соглашение и дата авторизации | | |
| 7. | Касательно изложенного в предыдущем пункте: А. Убедиться, что авторизация карточек произошла согласно надлежащим процедурам по кредитным/депозитным счетам, т.е. контроль за кредитоспособностью заявителя. Б. Убедиться, что карточка и пароль были выданы согласно должной процедуре, т.е. заявитель предоставляет соответствующее удостоверение личности при получении карточки, а один и тот же служащий банка не имеет доступа к паролю и карточке до выдачи. В. Убедиться, что выполняются инструкции НБУ и компаний по выпуску кредитных/дебитных карточек. Г. Убедиться, что заявитель и уполномоченный служащий банка подписали соглашение, содержащее идентификационные данные, используемые для подтверждения личности Держателя. Д. Убедиться, что документ содержит образец подписи клиента и адресные данные. Е. Проверить, что в базу данных Держателей вносятся изменения согласно соответствующего отчета (ежедневный отчет о новых Держателях?), а также что существует контроль за сверкой данного отчета и файлов/соглашений по новым Держателям. | | |
| 8. | Из выборки держателей, описанных в шаге 1 выберите одного держателя из каждой пятой группы и получите описание операций за ноябрь. Подтвердите следующее: А. Комиссионный и процентный доход были определены на счете в соответствии с соглашением и записаны в операционный день за соответствующий период. Б. Операции по счетам, включая Чарджбеки, были выполнены правильно и вовремя. | | |
| 9. | Произвольно выбрать 5 жалоб за данный период и предыдущий период, поступивших от Держателей относительно неправильного взимания комиссионных; проверить последующие действия со стороны соответствующих департаментов, а также правильное и своевременное проведение Чарджбеков в случае необходимости. | | |
| 10. | Произвольно выбрать 5 отчетов за данный период и предыдущий месяц относительно мошеннического использования карточек; проверить последующие действия со стороны соответствующих департаментов. Было ли немедленно прекращено действие карточки с данным номером? Связались ли с прочими задействованными банками? Была ли предпринята попытка | | |

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| | обнаружения мошенника путем обращения в милицию? Были ли внесены должные изменения в счет Держателя? | | |
| 11 | Произвольно выбрать 5 отчетов об утерянных и похищенных карточках за данный период и предыдущий месяц; убедиться, что выполняются инструкции НБУ и условия соглашений с компаниями по выпуску кредитных, дебетовых и прочих карточек для банкоматов. Убедиться, что действие карточки было немедленно прекращено, а также что персонал банка проверил возможность того, что пароль известен похитителю или нашедшему карточку. | | |
| 12 | Произвольно выбрать 3 кредитных и дебитных карточки, закрытых за период и убедиться, что информация об остановке действия карточек с данным номером была своевременно внесена в систему. Зарегистрировать причины закрытия счета и последующие действия в случае необычных ситуаций. Проверить, что в базу данных и ежедневный файл-сопровождение внесены данные о закрытии карточки, а также что существует контроль за сверкой данного файла/отчета с исходными документами. | | |
| 13 | Рассчитайте средний доход за ноябрь по выданным кредитам (счет 6041) и сравните со средней процентной ставкой по кредитным карточкам из выборки. Прокомментируйте различия. | | |
| 14 | Получите список просроченных кредитов состоянием на 30 ноября 1999 и определите приблизительный объем резерва под кредитные риски из отдела пластиковых карт. Убедиться, что просроченные кредиты включены в выборку держателей кредитных карт и в список. А также резервы соответствуют нормативам НБУ и способны адекватно покрыть потери по кредитам в кредитном портфеле. | | |
| 15 | Из отчета Украинского Процессингового Центра, за два дня в ноябре, сделайте выборку из 10 держателей, не включенных в выборку (См. пункт 1) и определить следующее: А. Операции за день были занесены на счет Держателя Б. Держатель имеет действительное соглашение. | | |
| 16 | Получить список списанных кредитов за период, заканчивающийся 30 ноября 1999. Определить, что эти операции были отображены на счете 9611. | | |

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Audit Program for Merchant Activity

| Step | Description | Done by | Working paper, reference |
|-------------|---|----------------|---------------------------------|
| 1. | Receive the current list of the Merchants from Plastic Cards Division. | | |
| 2. | Determine the total number of merchants. From this number decide on sample size. Sample size may be on the basis of a whole number or percent of the total number of merchants. Suggest using a percent, say 5 percent. Use the random number program on the Audit Grid to generate the sample records.. | | |
| 3. | Place results in Sample Coverage Summary Table below. If a larger coverage of transactions, turnover or income per month is desired, run the program again | | |
| 4. | Selected information on Merchants to be present in random Selected Information on Merchants Table , below: | | |
| a) | Merchants number; | | |
| b) | Number assigned by Bank. | | |
| c) | The name of the enterprise; | | |
| d) | Number of POS_ terminals / Imprinters; | | |
| e) | Date of agreement (registration of trade point); | | |
| f) | Number of transactions for a month (most recent month - at the discretion of auditor); | | |
| g) | Total volume for a month. | | |
| h) | Total commission for a month. | | |
| 5. | Build selection table on above criteria from data in Transmaster Merchant Database. | | |
| a) | Import selection table into Excel Random Selection Macro File Spreadsheet. | | |
| b) | Follow Instructions Spreadsheet to generate the random selection. Then complete the following audit steps for the records selected. | | |
| 6. | Verify existence of the agreements between Bank and enterprise by: (1) Comparison to Merchant Agreement Files and (2) Positive Confirmation Letters to merchants selected in sample, attached. | | |
| 7. | Select one week into a recent month, at the discretion of auditor, to provide and check mutual settlements (clearing) between Bank and Merchant, on the basis of the statements / reports / journals of accounts (of the selected Merchants): | | |
| a) | Check up timeliness of registers of the payment documents / "slips" from the Merchants and term's of money passing to an accounts of the Merchants, their conformity with agreement between Bank and Merchants; | | |
| b) | Verify accuracy of payments and accounting entries; | | |
| c) | Reconcile acceptance of trade receipts from the enterprises and make register accept "slips" for day or some period (at the discretion of auditor) with formed "Report about sending» in UPC; | | |
| d) | Verify, that the commission income on transactions with the Merchants is taken into account on the appropriate accounts (ac._6110) and for appropriate period; | | |
| e) | Verify procedures on follow up control in Plastic Card department. The transactions of the Merchants are in accordance with the described | | |

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| | | | |
|---|---|--|--|
| | procedures in Technological cards and functions of responsible persons). | | |
| 8. | Analyze presented documents of the Merchants (Clients) for solvency evaluation and limit determination on authorization. Sent letter by fax to 8 or 10 of the forty Merchants and confirm the following: | | |
| a) | Information to agree such as – date of conclusion, commissions & etc.; | | |
| b) | Volume of select test period and date settlement received for test period; | | |
| c) | Amount of any unsettled claims against AVAL Bank. | | |
| Note: Responses to the confirmation letters should be sent directly to Internal Audit Department | | | |
| 9. | Determine and analyze main causes of Chargebacks and review procedure for charging/charging off of the protested amounts. Receive the list of "Chargebacks" during the test period. Obtain information to present in the table: | | |
| a) | Name of the enterprises; | | |
| b) | The reason for charge off; | | |
| c) | Date charge off; | | |
| d) | Date of receipt the protested sum; | | |
| e) | Result of conducted negotiations on "Chargebacks" | | |

Selected Information on Merchants

Table - 1

| Merchants Number | No Assgn By Bank | Name of Company | No of POS Terms | Date of Agmt | No of Trans per Mo | Total Volume per Mo | Comm per Mo |
|------------------|------------------|-----------------|-----------------|--------------|--------------------|---------------------|-------------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Sample Coverage Summary

Table - 2

| | Description | Number of Merchants | Number of transaction for a month | Turnover for a month (UAN /1000) | Income for a month (commissions) |
|---|--|---------------------|-----------------------------------|----------------------------------|----------------------------------|
| 1 | Randomly selected Merchants – 1 st Sample | | | | |
| 2 | 2nd Sample, if Necessary | | | | |
| 3 | Total Sample | | | | |
| 4 | Total of Merchants | | | | |
| 5 | Percentage coverage of sampling | | | | |

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**Программа аудиторской проверки по операциям
Торговцев.**

| Шаг | Описание | Исполнитель | Ссылка на рабочие документы |
|-----|--|-------------|-----------------------------|
| 1. | Получить список Торговцев от Департамента пластиковых карт | | |
| 2. | Определить общее количество торговцев. На основе этого выполнить выборку. Выборка может базироваться на общем количестве торговцев либо на определенном проценте от общего количества торговцев. | | |
| 3. | Поместить результаты в табл. Пример покрытия выборки (представлена ниже). Если необходимо бо́льшее количество транзакций, бо́льшие обороты и бо́льший доход за месяц, то выполнить программу еще раз. | | |
| 4. | Информацию о выбранных Торговцах представить в виде таблицы Информация о Выбранных Торговцах: | | |
| А) | Порядковый номер; | | |
| Б) | Номер присвоенный Банком; | | |
| В) | Наименование Торговца (Юридического лица); | | |
| Г) | Количество POS_терминалов или Импринтеров; | | |
| Д) | Дата заключения договора (регистрация торговой точки); | | |
| Е) | Количество проведенных операций за месяц (за предыдущий (недавний) период – на усмотрение аудитора); | | |
| Ж) | Общий объем операций за месяц | | |
| З) | Общая сумма комиссионных за месяц | | |
| 5 | Разработать таблицу выборки в соответствии с критериями, описанными выше из базы данных Торговцев Трансмастер. | | |
| А) | Импортировать таблицу выборки в макрос случайной выборки данных. | | |
| Б) | Следовать инструкциям эл. Таблицы для подготовки случайной выборки. Затем выполнить шаги для выбранных данных. | | |
| 6. | Проверить наличие договоров между Банком и Торговцем (Юридическим лицом) следующим образом: (1) Сравнить файлы с контрактами с торговцами и (2) Сравнить письма подтверждения с торговцами, попавшими в выборку. | | |
| 7. | По усмотрению аудитора, выбрать одну неделю в месяце для проведения проверки взаиморасчетов между Банком и Торговцем, на основании выписок / отчетов / журналов расчетов (по выбранным Торговцам): | | |
| А) | Проверить своевременность подачи реестров платёжных документов / «слипов» от Торговцев и строки зачисления денег на счета Торговцев, их соответствие соглашению между Банком и Торговцем. | | |
| Б) | Проверить точность выплат и бухгалтерских проводок; | | |
| В) | Сверить принятие торговых квитанций от предприятий и составленный реестр принятых «слипов» за день/период со сформированным «Отчётом о посылке в УПЦ»; | | |
| Г) | Проверить, что комиссионные доходы по операциям с Торговцами учитываются на соответствующих счетах (сч. 6110) и | | |

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| | | | |
|----|--|--|--|
| | за соответствующий период; | | |
| Д) | Проверить процедуры последконтроля в Отделе пластиковых карт. Убедится, что операции с Торговцами соответствуют технологическим картам и обязанностям соответствующих сотрудников. | | |
| 8. | Проанализировать документы представляемые Торговцами (Клиентами) для оценки кредитоспособности и установления лимитов на авторизацию. Послать письма (факсом) 8 или 10 из 40 выбранных Торговцев для подтверждения следующей информации: | | |
| А) | Информация из договоров, такая как – дата заключения договора, процент комиссионных и прочие необх. данные; | | |
| Б) | Объем операций в аудируемом периоде и дата расчетов в аудируемом периоде; | | |
| В) | Количество каких-либо неразрешённых требований (исков) выставленных Банку | | |

Примечание: Ответ на подтверждающее письмо должен быть послан непосредственно в Департамент Внутреннего аудита.

| | | | |
|----|--|--|--|
| 9. | Выяснить и проанализировать основные причины возникновения «Чарчбеков» и установленную процедуру поступления / списания со счётов Торговцев опротестованных сумм (Проверить наличие Технологической карты по данной операции). Получить список опротестованных сумм «Чарчбеков» за аудируемый период. Полученную информацию представить в таблице: | | |
| А) | Наименование Торговца; | | |
| Б) | Причина списания; | | |
| В) | Дата списания; | | |
| Г) | Дата зачисления опротестованной суммы; | | |
| Д) | Результат проведённых переговоров по «Чарчбекам». | | |

Информация о Торговцах

Табл. - 1

| Номер торговца | Номер, присвоенный банком | Название компании | Кол-во POS терминалов | Дата контракта | Кол-во операций за месяц | Объем операций за месяц | Комиссионные за месяц |
|----------------|---------------------------|-------------------|-----------------------|----------------|--------------------------|-------------------------|-----------------------|
| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |

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Пример покрытия Выборки

Табл. - 2

| | Описание | Колич-во выбран. предп- риятий | Колич-во опреаций за июль месяц | Оборот за июль месяц (ГРН. /1000) | Комиссион- ный доход за июль месяц |
|---|----------------------------------|---|--|---|--|
| 1 | Крупные предприятия | | | | |
| 2 | Предприятия выбранные на угад | | | | |
| 3 | Всего выбранных предприятий | | | | |
| 4 | Всего предприятий | | | | |
| 5 | Процент покрытия выборки | | | | |

Aval Bank Credit Card Division Audit Program

Attachment IVg

Automated Audit
Proced or Sys Check

| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> (note missing controls) |
|-------------|--|---|--------------------------------|---|
| MKT | 1. Develops division marketing strategy | <u>Report on the loaded payroll journals</u> - amounts of the loaded amounts of salaries, bonuses, etc. by the Salary Projects of the Central Office. The report is generated based on data from the Information Processing Department. | | |
| MKT | 2. Advertises for: | <u>UPC weekly report on "acquiring" for all merchants of the Bank</u> - Used to estimate efficiency of cooperation with each partner company. | | |
| MKT | a. Cardholders to use merchant services | <u>UPC daily shipment reports on all merchants of the Bank</u> by payment systems. | | |
| MKT | b. Corporate card agreements | <u>UPC reports on transactions of specified merchants</u> for specified periods (on request) | | |
| MKT | c. Merchant agreements | <u>UPC Monthly report "Settlements"</u> - used to estimate profitability of card business as a whole. | | |
| MKT | 3. Concludes: | <u>Monthly report from joint-stock company "Bankomsvys"</u> on the radio communications services provided. Used to estimate its performance. | | |
| MKT | a. Merchant agreements | <u>Reports and extracts from the "Register"</u> merchant's data base | | Select random sample of 10 <u>merchants records</u> from the Register extract to trace to agreements to verify that they are authorized and up-to-date. First Automated Random Selection of records to be tested. |
| MKT | b. Salary payment agreements | <u>Authorization History</u> - (for specific card/or merchant) provided by UPC | | Select random sample of 10 <u>salary payment records</u> from the database extract to trace to agreements to verify that they are authorized and up-to-date. |
| MKT | c. Telecommunication agreements | <u>Nilson Reports</u> | | Select random sample of 3 <u>telecommunication agreement records</u> from the database to trace to agreements to verify that they are authorized and up-to-date. |
| MKT | d. Clients of travel agencies when they travel abroad | | | |
| MKT | 4. Training of cashiers | | | |
| MKT | a. for small branches | | | |
| MKT | b. for merchants | | | |
| MKT | 5. Issues procedures for small branches | | | |
| MKT | 6. Develops forms for card agreements for small branches | | | |
| MKT | 7. Locates sites for ATM placement | | | |
| MKT | 8. Concludes agreements for ATM placement | | | Select random sample of 5 records on <u>ATM placement</u> from the database to trace to agreements to verify that they are authorized and up-to-date. |
| | | | | Select random sample of 5 agreements on <u>ATM placement from hard copy files</u> and trace to agreements file on the database to verify that they are there and up-to-date. |

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| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|-------------|--|---|--------------------------------|---|
| IR | 1. Communicates with international payment systems | <u>International Relations Department</u> <u>Files with incoming chargebacks are received from UPC</u> - The files contain the transaction data, chargeback reason code, etc. Can be retrieved from the UPC exchange server any time. Used for chargeback processing. | | Select random sample of 2 <u>records on chargebacks</u> from the <u>database</u> . for each reason code to trace to agreements to verify that they are authorized and up-to-date. |
| IR | 2. Settlement services for agent banks and affiliated banks | <u>Reports with previous two week authorization volumes of outgoing transactions</u> - performed with the use of affiliate member bank cards. Received by e-mail daily from UPC. Used for risk control of affiliate bank card operations. | | 2. Select random sample of 1 <u>record on outgoing transactions</u> from the <u>database</u> for each affiliated bank agreement to verify that they are authorized and up-to-date. |
| IR | 3. Handles disputes between merchants and cardholders, e.g. chargeback resolution | <u>Reports with previous month settlement volumes of outgoing transactions</u> - performed with the use of affiliate member bank cards. Received by e-mail daily from UPC. Used for risk control of affiliate bank card operations. | | Select random sample of 5 <u>records of outgoing transactions received from UPC by e-mail each day</u> on the previous month to trace through to settlements with affiliated banks. |
| | | <u>Reports of sufficiency of funds by agent banks on correspondent accounts with Aval</u> - Each agent bank distributing Aval cards among his customers must maintain a certain amount of funds on his cor. account with Aval to guarantee transaction settlement for the cards he has distributed. The reports can be generated any time by a software developed by a technical support dept. programmer. The software uses TransMaster databases. | | Select random sample of 5 records from the database to trace to agreements to verify that they are authorized and up-to-date. |
| | | | | 3. Select random sample of five <u>disputes</u> to verify they were resolved properly and timely. |
| IP | 1. Handles issuing of cards | <u>Information Processing Department</u> | | |
| IP | 2. Replenishment payments a. Cardholders b. Salary projects 3. Concludes Agreements | <u>Batch Report</u> - contains payments | | a. Select random sample of 5 Corporate Card Agreements from the database to trace through the system to verify to cardholders agreements (files). |
| IP | a. corporate card agreements b. agreements with individual cardholders | | | |
| IP | 3. "Manages cardholder database on Transmaster System" | <u>Card List</u> - generated using appropriate option of TransMaster. Contains a list of cards and cardholders in compliance with indicated parameters. | | c. Select random sample of 25 cardholder records from the database to trace through the system to verify to cardholders agreements (files). |

Activities with the Clients and
Information processing Dept.

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| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|-------------|-----------------|--|--------------------------------|-------------------|
|-------------|-----------------|--|--------------------------------|-------------------|

Consulting services to the clients on opening and closing and tariffs of the Bank and balances of the accounts.

Compare customer complaints to blocking and unblocking procedures.

Blocking/unblocking of the funds on the clients' accounts. Input/withdrawal of the cards from/to stop-list.

Processing of the information on ATM cards implementation of telex authorization for the operations, etc.

IP 4. Processing of Payrolls received via E-mail (Salary Projects)

Report on loading of salary file - contains the parameters of the processed payroll file (amount, number of accounts, errors revealed).

Processing of Salary Breakdown File, via E-mail

IP
MKT

Key Requirements

Present service is provided to the legal entities who have a general salary agreement with the Head Office of Bank Aval

MKT

Before dissemination of salary file distribution via e-mail, the client (legal entity) has to sign an additional contract with the Head Office of Bank Aval which regulates these operations (Appendix I).

Review agreed provisions for two salary agreements, and compare to how the system is actually working prior to and during payroll disbursements to employees.

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Dept
IP

Function

Reports Used by Credit Card Depts

Technol Card System Cks

Audit Step

Procedure
Proced or Sys Check

After signing the additional agreement, the Bank has to prepare a specimen of the software PGP (Pretty Good Privacy) to the client. After this the client and the Bank exchange clear ciphering keys for the data. The physical transfer of the software and cipher key to the client is documented with the conveyance letter (Appendix 2). If necessary, responsible employee of the IT Department consults with a representative of the Client regarding the software issues. Ciphering of the data is done, using asymmetrical model with ciphering key of 1024 bytes.

IP

IP

Exchange of Cipher Keys between the Bank and the Client

The Bank and the Client have to assign responsible individuals from both parties for the safeguarding and use of the ciphering keys and passwords of PGP.

1/5

Dept Function Reports Used by Credit Card Depts

Technol Card System Cks

Audit Step

IP

Responsible employee of the Bank passes the software to the responsible employee of the Client together with global key to install the PGP on the Client's computer. This transaction is documented by the representatives of both parties in two copies of the conveyance letter.

IP

Responsible employee of the Client installs the software on his computer and creates a key to pass it to the Bank. The password has to be memorized and if necessary, to be stored in the vault. For the two agreements selected, look for any evidence that the password has been compromised, e.g. written down or passed around the department.

IP

Upon the transfer of the key to the Client, representatives of both parties have to sign the copies of the conveyance letter.

IP

The responsible employee of the Bank has to install the key into the system for further operations.

IP

The responsible employee for the fulfillment of the above is Senior Engineer of the IP Dept. of the Plastic Card Division.

IP

The Supervisor for the implementation of the above is the Head of the IP Department.

IP

Operation of the Salary Payment System

IP

The Client using the "Salary" installed by the Bank creates a salary distribution file with the extension .dbf and text file with salary listing.

| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|-------------|-----------------|--|--|-------------------|
| IP | | | The enterprise sends salary funds to the Bank account defined in the general salary agreement. The amount defined in the file has to equal amount of sent salary funds. | |
| IP | | | The enterprise, in accordance with the general salary agreement, sends the total commission amount for the cash/settlement services to the Bank. | |
| IP | | | Responsible employee of the Client zips the text file and listing file by RAR.exe with the extension .dbf | |
| IP | | | The enterprise ciphers the file with its own key. | |
| IP | | | The enterprise includes ciphered file into a single message and sends it to the bank to the address salary@card.avabank.com in the following manner: SALARY <name of the enterprise>:<Number of people in the file>. For example, SALARY:ZATZustaz:298 | |
| IP | | | Upon the receipt of the salary funds to the account #2909, the employee of the Bank responsible for the processing of the salaries file has to perform the following tasks: | |
| IP | | | - Review the salary spreadsheet of the enterprisee | |
| IP | | | - Decipher it and verify the authorization of the electronic signature | |
| IP | | | - Calculate the amounts | |
| IP | | | - Review the accuracy of the structure of the database | |
| IP | | | Verify the correspondence of the total amount in the text file with amount of the sent salary funds. | |

| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|-------------|--|--|--|-------------------|
| IP | | | - Allocate salary amount to card accounts of the enterprise employees, using "Salary" software during three banking days. | |
| IP | | | After implementation of all the operations, responsible employee of the Bank sends e-mail to the Client stating that the the salary file has been processed and funds were distributed to the card accounts. Otherwise, if there are errors, e-mail message weould specify that a failure ocured while receiving salary file for processing, with the reasons for failure and detailed list of the errors. | |
| IP | | | The responsible employee for implementation of the above is Economist of the IP Dept. | |
| IP | | | The Supervisor for the implementation of the above is the Head of the IP Deot, | |
| IP | | | The general supervision of the requirements is done by the Head of the IP Dept. | |
| IP PCT | 1. Settlements with Merchants and Financial Institutions | | | |

Settlement with Merchants TC-97

Dept
PCT

Function

Reports Used by Credit Card Depts

Technol Card System Cks

Audit Step

The officer of the Plastic Card Transactions Department obtains slips from merchants, checks them for accuracy and enters data into the register of slips received during the day, indicating consolidated reports' numbers and the amounts. The copies of the register are submitted to the UPC operator on a daily basis for further transaction processing purposes. The register is prepared in two copies. Upon submission to the UPC, it is signed by the officer of the External Settlements Division and by the UPC operator.

UPC's Settlements Division keys in the data from the merchants' slips and generates a daily report on transactions processed (Report on shipment), which is sent to the Bank via e-mail. Based on the report and using settlement software, the officers of the Plastic Card Transactions Department generate the register with the following being recorded: transactions by each individual merchant, the name of the merchant, trade point code, loan account number, Branch ID Code of the recipient bank, commission charged and by Visa-EC/MC and Cirrus/Maestro payment systems.

PCT

Dept Function Reports Used by Credit Card Depts

PCT

Technol Card System Cks

Audit Step

Reconcile summary of postings made to merchant accounts in GL to detail in activity in merchant accounts over a one-week period. Note: this control is missing in Aval procedures. It is assumed that the shipment reports are correct. That makes this audit step more important.

Based on the settlement register and using interim entry program, the PCT Dept. officers authorize final entries to be carried thorough the operating day of the Bank to the General Ledger.

PCT

Authorized entries are recorded in the payment document register.

Prepare register of manual entries for a one-week period and trace them to proper authorization. Note: this control is missing in Aval procedures. That makes this audit step more important.

PCT

The register is signed by the Head of the PCT Dept., the assigned employee and the officers that have A&B signature authority. In case entries are made manually, there is a memorial order prepared upon the entry of the internal document. The memorial order is signed by the Chief Accountant, the Head of the PCT Dept. and the assigned officer. In case funds are transferred to the account of other banks' customers or to the branch account, there is a payment order prepared, which is signed by the officers that have A&B signature authority and it is stamped approved.

PCT 2. Settlements with Payment Systems

| |
|---|
| Settlement with Payment Systems VISA-UMC |
|---|

PCT

Statements for Visa-UMC clients' payments arrive electronically at Aval Bank from UMC (incoming files-through leased line).

PCT

Technical Support Dept. engineer from the Credit Card Division processes incoming files for Visa-UMC card transactions by loading them to the Transmaster System.

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Dept
PCT

Function

Reports Used by Credit Card Depts

Technol Card System Cks

Audit Step

Compare charges made to clients account to accounting entries over a one-week period in the Transmaster System to those made to the General Ledger. Aval activity in Transmaster in Bank Aval with that in Banks' GL. Note: this control is missing in Aval procedures. That makes this audit step more important.

Funds are charged off the client's account, statement is prepared. Based on the statement, the economist from the PCT dept. records cover in UMC settlement accounts minus the bank's fees.

▲ All accounting entries are recorded in the PCT Dept.

After cover is recorded, payment order is prepared and signed by the 1st and 2nd persons entitled to sign documents. Head of the PCT and the officer. The number of the incoming file, total amount of the transaction, and bank's fee is provided in the description of the payment. Payment order and a copy of the statement are also kept in PCT.

Settlements through International Payment Systems

Compare amount processed through UPC on a one-day test period, with that recorded in Aval clearing accounts and that posted in Aval correspondent accounts in settlement banks.

For transactions with credit card Visa International, issued by a Ukrainian Bank (except Aval), settlements are processed through NBU; for international cards Visa - Chase Manhattan Bank NY; for Eurocard, Cirrus/Maestro issued by Ukrainian Banks (except) Aval and banks affiliate members of Europay International - Ukrainian Export-Import Bank, international cards Eurocard, Cirrus Maestro - Midland Bank, London; for international Mastercard - Chase Manhattan Bank.

PCT

PCT

PCT

PCT

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| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|-------------|-------------------------------------|--|---|--|
| PCT | | | Settlements with payment systems for operations with credit cards are recorded in Aval correspondent account in settlement banks. | |
| PCT | | | Daily, UPC submits to the Bank, the electronic version of the settlement of transactions processed for each day reflecting each payment system separately. | Compare UPC transmissions to Bank Aval with PCT accounting entries for several days to the GL. <u>Note: this control is missing at Bank Aval.</u> That makes this audit step more important. |
| PCT | | | The Chief or Senior Economist of the PCT Dept. analyzes reports and records appropriate accounting entries in subsystem Visa, Master. | |
| PCT | | | | Review documentation for agreements with international payment systems - make tests to ensure that data sent was equal to data received. |
| | | | Documenting procedures: The following documents received, are submitted by the payment systems and are the bases for recording settlements with the payment systems: (1) Visa International - Statement VSS, TOPAZ, (2) Europay International, Cirrus/Maestro - Statement ECCS, (3) Mastercard International - statement INET, sent by UPC electronically. Incoming and outgoing transaction files are provided by UPC, such as: customer settlement itr-files (consolidated), sr-files covers for acquiring (for banks affiliated members). Acceptance/sign-off of funds realized by settlement banks base on the respective statements. | |
| PCT | 3. Settlement on ATMs | | | |
| PCT | 4. Settlement with affiliated banks | | | |

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| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> |
|-------------|-----------------|--|
| PCT | | |

Technol Card System Cks

Audit Step

Settlements with Bank Affiliates,
and Members of Europay
International using plastic cards

Reconcile amount passed to an affiliated bank.

Bank Aval implements settlements for the bank affiliates who are members of Europay International. According to the agreement, all the settlements are made in the national currency of Ukraine. Bank Aval receives a commission of the settlement bank, calculates and receives a commission for interchange according to the agreements with bank affiliates members of Europay International. Settlements are implemented in the UPC which creates a report on processed transactions on a daily basis as of the previous date and sends it to the Bank in the soft copy (NB-report). Based on NB-report, the accounting entries are made.

Settlement process is fully automated. Therefore, reporting files are loaded into the Operating Day of the ISAOD, and thereby posted to the General Ledger.

In order to implement the settlements, Bank Aval has opened clearing account 2924All.

Dept
PCT

Function

Reports Used by Credit Card Depts

Technol Card System Cks

All the entries are reflected in the register.

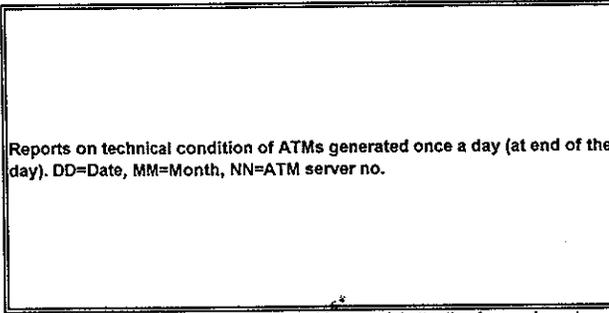
Audit Step

PCT

5. Settlement on joint projects with other firms

The register is signed by the individual who has a right of secondary signature, head of the PCT Dept., and the responsible employee.

| Dept | Function | Reports Used by Credit Card Depts | Technol Card System Cks Major Reasons for card withdrawal are: | Audit Step |
|----------|---|--|--|---|
| MON-24hr | | | | |
| MON-24hr | | | | 1. Placement of card on stop list. |
| MON-24hr | | | | - assigned employee has to verify correctness of adding a plastic card to the stop list. |
| MON-24hr | | | | - assigned employee has to assist only users of "golden" or corporate plastic cards. |
| MON-24hr | | | | - assigned employee has to assist any client if the balance if the balance in the account exceeds equivalent of USD 200. |
| MON-24hr | | | | 2. Incorrect pin input three times |
| MON-24hr | | | | 3. ATM withdraws a plastic card as a result of a technical error when processing a transaction or any other technical malfunctions. |
| MON | 2. Prevent overdrafts and quick reaction time when they occur | | | Monitoring of Overdrafts on Client Card Accounts |
| MON | 3. Monitoring of merchant activities | Monitoring Department reports on fraud with the merchants of the Bank | | Daily review of the operations which lead to overdrafts on client card accounts. |
| ATMS | 1. Technical Support for operating ATMs | Reports on technical condition of ATMs updated every 5 minutes <u>atmcito.txt</u> - Reflects the events requiring special attention from the beginning of the day till the current moment | | Preparation of reports relating to the number and amount of overdrafts on client card accounts. Verification of causes for overdrafts. |
| ATMS | 2. Supply cash to ATMs | <u>atmh1st.txt</u> - history of events from the beginning of the day till the current moment | | Presentment of the information regarding the client debts to the Security Department of the Plastic Card Division. |
| ATMS | | <u>atmoment.txt</u> - ATM status as of the current moment | | Supplying Cash to ATMs TC-96 |

| Dept ATMS | Function | Reports Used by Credit Card Depts <u>retcard.txt</u> - list of cards retained by ATM's for the period from the beginning of the day till the current event. | Technoi Card System Cks | Audit Step |
|--------------|----------|--|--|--|
| ATMS | |  | The amount of cash and the schedule of encashments are determined by an engineer of the ATM Support Dept. based on information on balances from the authorization center and taking into consideration, the requirement of continued operation of the ATM and the established limit. | |
| ATMS | | <u>ctDDMMNN.txt</u> - reflects the events requiring special attention for previous day. | | The request for total amount of cash Hryvna by denominations and cartridges for each ATM are signed by the Head of the Credit Card Division and submitted by the the ATM Support Dept. engineer to the Deputy Head of the Cash Desk Transactions or to the Head of Hryvna Cash Desk. |
| ATMS | | <u>stDDMMNN</u> - history of events for previous day | | Based on the second copy of this request, an officer of the External Settlements issues a withdrawing order for the total amount to be loaded in each ATM. |
| ATMS | | <u>rcDDMMNN</u> - list of cards retained by ATM for previous day | | The cash money is being prepared, the cartridges are being loaded, closed and sealed by the cashier and cashier-controller, in the presence of the cash desk manager. |
| | | | | Cash desk of the Bank issues the cash money to the collector in compliance with the specification (signed by three persons: cash desk manager, deputy chierf accountant and the collector). |

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| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|-------------|-----------------|--|--------------------------------|--|
| ATMS | | | | |
| | | | | During the course of loading of an ATM, the ATM Support Engineer removes the control loading slip (balance), the system transaction log (containing all transactions) and hands it over to the External Settlements officer. |
| ATMS | | | | Based on the loading slip, the External Settlements Officer issues a receipt cash order for the amount unloaded. |
| ATMS | | | | Based on the control balance slip, the External Settlements Officer issues a withdrawal order for the ATM balance and a receipt cash order for this balance to the cash desk of the Bank, and submits it to the Deputy Head of he Cash Desk Transactions or to the Head of Hryvna Cash Desk. |
| ATMS | | | | ATM transactions in a detailed report by withdrawal transactions is received daily by the UPC. |

| Dept | Function | Reports Used by Credit Card Depts | Technol Card System Cks | Audit Step |
|--------------|--|--|-------------------------|---|
| ATMS | | | | <p>Documentation: An External Settlements Officer conducts a higher-type journal for each ATM including: (1) Receipt cash order for the amount of loading, (2) ATM control slip for the amount of loading by denominations, (3) Withdrawal cash order for the unloaded amount, (4) ATM control slip for the amount of unloading by denominations, (5) Withdrawal cash order for the amount of ATM transactions for the period between encashments, (6) Consolidated report on transactions via ATM, and (7) Reconciliation reports.</p> |
| ATMS | | <p><u>retcarNN.all</u> - summary list fo cards retained by ATMs for previous 30 days</p> | | <p>A ground for accounting entry on transactions via ATM is the consolidated ATM report, "audit", which contains transaction amounts for every day of the encashment period. This reporting file is submitte by the UPC.</p> |
| ATMS ATMS | | <p>Reports on Financial Status of ATMs <u>dispens.txt</u> - amount of dispensed cash money for each ATM form loading till current moment. Used to schedule encashments. Generated by UPC at request of ATM Support</p> | | |
| ATMS | | <p><u>av_dDDmmpNN</u> - 'detailed report' on all transactions of each ATM for previous day. Generated by UPC at the end of each day. Used as a source of statistics on daily turnovers for scheduling encashments.</p> | | |
| TECHS | <p>1. Supports and maintains intra-office e-mail system and electronic document flows</p> | <p><i>-No Reports Used or Prepared-</i></p> | | |
| TECHS | <p>2. Creates programs for generating reports for the other departments, particularly the Plastic Card Dept.</p> | | | |
| TECHS | <p>3. <u>Database administration</u> for the Oracle Transmaster System</p> | | | <p>Aval Bank's Transmaster System <u>Preparatory actions: From 9-9:30 am</u> Find out NBU exchange rate.</p> |
| TECHS | <p>4. Technical support for office equipment (PC's, printers, workstations, etc.)</p> | | | |



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Dept
TECHS

Function

Reports Used by Credit Card Depts

Technol Card System Cks
Check server with system data.

Audit Step

5. Technical development work on new projects - programs deal with work related to payment systems and services to clients

| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> <u>Check accuracy of the current</u> <u>data in the system and on the</u> <u>server.</u> | <u>Audit Step</u> |
|-------------|--|--|--|--|
| CARDPAY | 1. Develops software for UPC and 2000 POSs and ATMs throughout Ukraine | | | <u>Transfer UPC data to Aval</u> through exchange server from 9:30 am - 10:00 am and 4:00 pm - 5:00 pm |
| CARDPAY | 2. Instals and services 2000 ATMs and POSs - acts as vendor. | | | International W-files and local L-files of transactions |
| CARDPAY | 3. Bills Bank Aval for servicing all of its POSs and ATMs. | | | E-files with pins A-files with amounts blocked during authorization Reporting files necessary for international settlement dept activities received from Visa and Europay for settlements with merchants and financial institutions |
| UPC | 1. Online processing center for 17 Ukrainian Banks | | | |
| UPC | 2. Aval Bank is its biggest client bank accounting for 50% of its gross revenue. | | | <div style="border: 1px solid black; padding: 2px;">Use of Plastic Card System - from 10:00 am - 1:00 pm and 2:00 pm - 4:00 pm</div> Monitor user authorization to various menu selections. Assistance to the departments of the Credit Card Dept. <u>Database and register adjustment</u> based on the documents furnished by the staff of the Credit Card Division <div style="border: 1px solid black; padding: 2px;">Restoration of data lost during system failures:</div> Inform all users about failure incurred. Restore data base on the last back-up. Grant access to economists to restore data based on the sound documents, such as agrrrments with clients, payment orders, etc. Upload international and local files with transactions. |

Dept

Function

Reports Used by Credit Card Depts

Technol Card System Cks

Audit Step

Inform all users about restoration of the system.

Monthly (on 12th) at the end of the reporting period when the bank calculates interest payable and receivable on customer accounts for the period administrator has to calculate fixed payment for the period, such as plastic card user monthly fee, fees for statement preparation, etc. After that, customer accounts are either debited or credited.

Preparation of monthly reports for bank's customers - payments processed on/off plastic cards.

Scheduled operations: From 10:00 am - 10:30 am and 5:00 pm - 5:30 pm

Extract data about purchases, payments and drawings from the appropriate local and international files of transactions to temporary databasel.

Accept and record to the client data base files with PINs.

Accept and record to the client data base files with amountss blocked during authorization.

Input current foreign currency exchange rates.

Monitor data in the temporary data base.

Add data form the temporary to the permanent data base.

Refresh payment data base which is used as a back-up of the payments processed for the month - add new data from the temporary data base.

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Dept

Function

Reports Used by Credit Card Depts

Technol Card System Cks

Prepare the list of cards with overdrafts to be added to the "soft" stop list.

Audit Step

| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|---------------------------|----------------------------------|--|--|---|
| IP, TECHS IP IP | Personalization of Plastic Cards | —————→ | <p>Accumulate debits and credits for each plastic card account for the month.</p> <p>Refresh stop-list (add and eliminate plastic cards fro the list)</p> <p>Prepare daily list of input data.</p> <p>Prepare daily Balance Sheet for plastic card accounts.</p> <p>Prepare a check list for plastic card accounts.</p> <p>Prepare Q-file with authorization parameters and S-file with the stop-list.</p> <p>Prepare exporting files. Repeated registration of data with unchanged registration date.</p> <p>Submit exporting Q-files to UPC.</p> <p><u>Evening back-up of payment card system</u> (Transmaster system) from 5:00 pm until the completion of the task.</p> <p>Copy files to back up disk.</p> <p>Archive files in the back up disk.</p> <p>Move archive to ong-term bask up disk.</p> <p>Change data registration card.</p> <p>Double check of data integrity.</p> <p><u>Responsibility</u> - The senior engineer of the division personally accounts for accurated performance of the tasks described above.</p> | <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p align="center">Personalization of Plastic Cards TC-101</p> </div> <p>Once a day, employees of the department responsible for client services (IP) create a file for personalization of he card data (out-file) based on the client data input by the card system. <u>The Schedule is as follows:</u></p> |

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| <u>Dept</u> | <u>Function</u> | <u>Reports Used by Credit Card Depts</u> | <u>Technol Card System Cks</u> | <u>Audit Step</u> |
|-------------|-----------------|--|---|--|
| TECHS | | | 15:30 - 15:45 - Creation of out-files | |
| TECHS | | | 15:45 - 17:00 Printing of PIN envelopes | |
| TECHS | | | 17:00 - 18:00 Personalization of plastic cards (Visa, EuroCard) | |
| TECHS | | | 09:00 - 12:00 Personalization of Debit plastic cards (Maestro) | |
| TECHS | | | Having all the necessary equipment compliance with the rules of international settlement systems VISA and Europay, employee of the technical department (TECHS) generates and prints personal PIN code in the envelopes. | |
| IP, TECHS | | | if plastic material is stored in one location and personalization is done in another, the transportation of the plastic material and personalized cards is implemented in special case accompanied by security employees of the Bank. The case must be closed. One key has to be stored in the vault where the plastic is stored, and another key has to be stored in the personalization room. | Review policy as compared to actual physical security provided. |
| IP TECHS | | | <div style="border: 1px solid black; padding: 2px; display: inline-block;">Personalization Process</div> Responsible employee creates a daily file for personalization of cards, using card system (out-files) | Compare total of daily file of totals personalized with new card with those sent with PINs to new hads |

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Specifications for automated random selection procedure for audit testing

- 1 **input** - "test data for audit procedure" data matrix worksheet
- 2 Provided - unique name for each random selection audit step on the "Audit Procedure Worksheet"
- 3 Create unique no. identifier for each record.
- 4 Provide option to either select a fixed number or percent of the universe random sample generation.
- 5 Place this option in the column next to the audit procedure
- 6 **output** - selected records worksheet

**TEST DATA FOR AUTOMATED PROGRAM
TO SELECT A RANDOM SAMPLE**

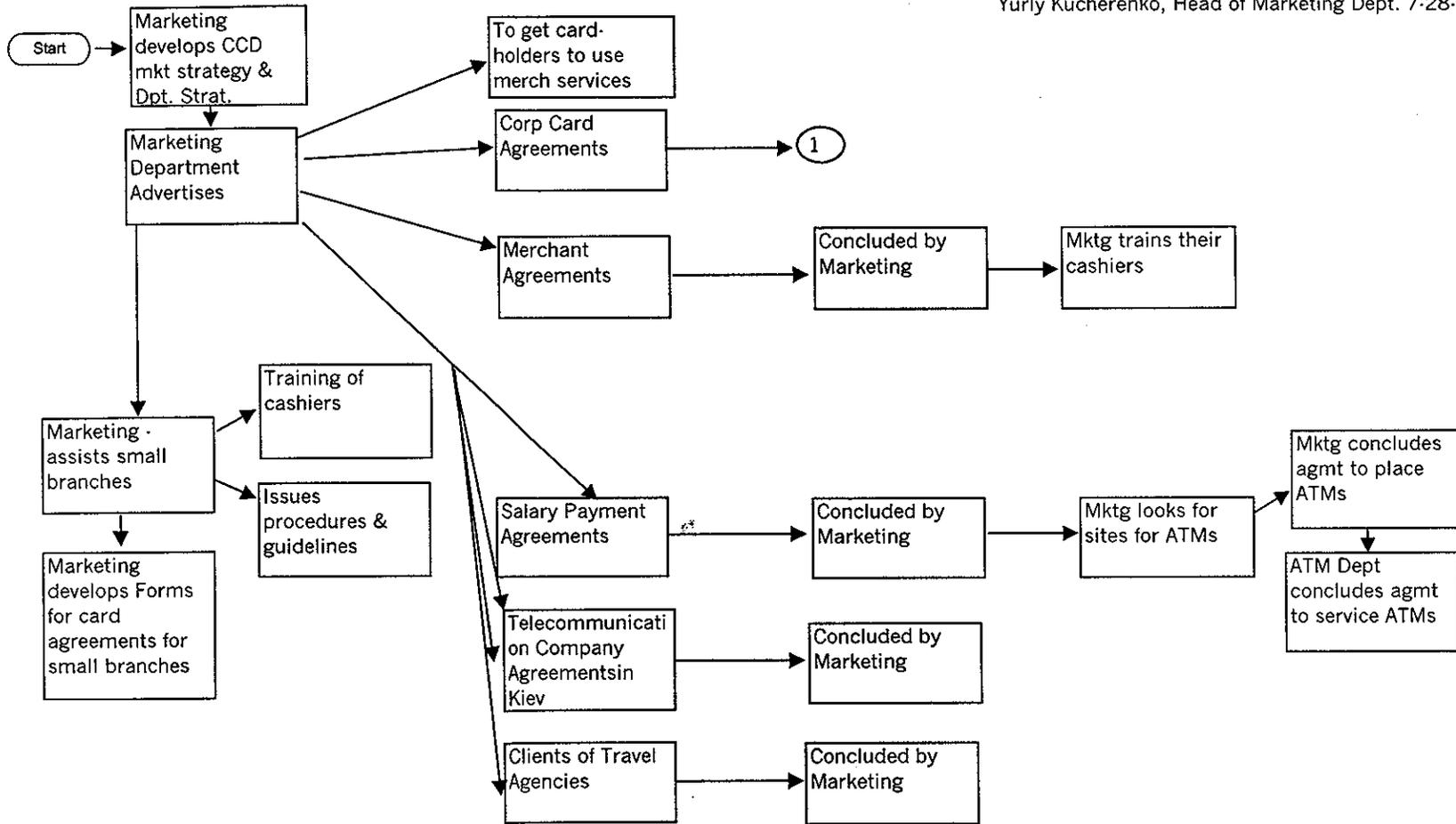
| CONTROL NUMBER | NAME | AMOUNT | DATE | COMM-TERM | LIMIT | TURNOVER | QTYTRANS | COMM-AMT |
|----------------|--------------------|---------------|-----------|---------------|---------------|-----------|----------|----------|
| | (20) alphanum | (15) alphanum | (10) date | (15) alphanum | (15) alphanum | (15) num | (10) num | (15) num |
| | DNEPR NIGHT BAR | 6110795 (USD) | 2-Oct-96 | 4\4\3 | 150\250\0 | 93777.89 | 51 | 2813.34 |
| | DNEPR PANORAMA BAR | 6110795 (USD) | 3-Jan-97 | 3\3\3 | 1000\500\500 | 32235.00 | 45 | 967.05 |
| | DNEPR RESTAURANT | 6110795 (USD) | 6-May-98 | 3\3\3 | 150\250\250 | 2245.00 | 66 | 67.35 |
| | DNEPR EXPRESS BAR | 6110795 (USD) | 3-Oct-98 | 3.5\3.5\3.1 | 150\250\0 | 667775.00 | 101 | 20033.25 |
| | DNEPR HALL BAR | 6110795 (USD) | 2-Jan-98 | 3\3\3 | 1000\500\500 | 3434.00 | 33 | 103.02 |
| | DNEPR RECEPTION | 6110795 (USD) | 15-Jun-98 | 3\3\3 | 150\250\250 | 78765.00 | 44 | 2362.95 |
| | NIGHT BAR | 6110795 (USD) | 12-Jul-98 | 3.5\3.5\3.1 | 150\250\0 | 93777.89 | 51 | 2813.34 |
| | PANORAMA REST | 6110795 (USD) | 2-Oct-96 | 3\3\3 | 1000\500\500 | 32235.00 | 45 | 967.05 |
| | HOTEL RECEP | 6110795 (USD) | 3-Jan-97 | 3\3\3 | 150\250\250 | 2245.00 | 66 | 67.35 |
| | HOTEL KYIV LOBBY | 111255 (UAH) | 6-May-98 | 3.5\3.5\3.1 | 150\250\0 | 667775.00 | 101 | 20033.25 |
| | HOTEL DENIPRO REST | 111255 (UAH) | 3-Oct-98 | 3\3\3 | 1000\500\500 | 3434.00 | 33 | 103.02 |
| | UMC SHOP 1 | 111255 (UAH) | 2-Jan-98 | 3\3\3 | 150\250\250 | 78765.00 | 44 | 2362.95 |
| | UMC SHOP 2 | 111255 (UAH) | 15-Jun-98 | 3.5\3.5\3.1 | 150\250\0 | 93777.89 | 51 | 2813.34 |
| | UMC SHOP 4 | 111255 (UAH) | 12-Jul-98 | 3\3\3 | 1000\500\500 | 32235.00 | 45 | 967.05 |
| | UMC SHOP 5 | 111255 (UAH) | 2-Oct-96 | 3\3\3 | 150\250\250 | 2245.00 | 66 | 67.35 |
| | UMC SHOP 6 | 111255 (UAH) | 3-Jan-97 | 3.5\3.5\3.1 | 150\250\0 | 667775.00 | 101 | 20033.25 |
| | AMC KYIV 1 | 111255 (UAH) | 6-May-98 | 3\3\3 | 1000\500\500 | 3434.00 | 33 | 103.02 |
| | AMC KYIV 2 | 111255 (UAH) | 3-Oct-98 | 3\3\3 | 150\250\250 | 78765.00 | 44 | 2362.95 |
| | AMC KYIV 3 | 111255 (UAH) | 2-Jan-98 | 3.5\3.5\3.1 | 150\250\0 | 93777.89 | 51 | 2813.34 |
| | AMC KYIV 4 | 111255 (UAH) | 15-Jun-98 | 3\3\3 | 1000\500\500 | 32235.00 | 45 | 967.05 |
| | AMC KYIV 5 | 111255 (UAH) | 12-Jul-98 | 3\3\3 | 150\250\250 | 2245.00 | 66 | 67.35 |
| | AMC KYIV 6 | 111255 (UAH) | 2-Oct-96 | 3.5\3.5\3.1 | 150\250\0 | 667775.00 | 101 | 20033.25 |
| | SUPERMKT ALADIN 1 | 111255 (UAH) | 3-Jan-97 | 3\3\3 | 1000\500\500 | 3434.00 | 33 | 103.02 |
| | SUPERMKT ALADIN 2 | 111255 (UAH) | 6-May-98 | 3\3\3 | 150\250\250 | 78765.00 | 44 | 2362.95 |
| | GOLD FISH REST | 111255 (UAH) | 3-Oct-98 | 3.5\3.5\3.1 | 150\250\0 | 93777.89 | 52 | 2813.34 |
| | TRAVEL TOURS 1 | 111255 (UAH) | 2-Jan-98 | 3\3\3 | 1000\500\500 | 93777.89 | 51 | 2813.34 |
| | TRAVEL TOURS 2 | 111255 (UAH) | 15-Jun-98 | 3\3\3 | 150\250\250 | 32235.00 | 45 | 967.05 |
| | TRAVEL TOURS 3 | 111255 (UAH) | 12-Jul-98 | 3.5\3.5\3.1 | 150\250\0 | 2245.00 | 66 | 67.35 |
| | TRAVEL TOURS 4 | 111255 (UAH) | 2-Oct-96 | 3\3\3 | 1000\500\500 | 667775.00 | 101 | 20033.25 |
| | TRAVEL TOURS 5 | 111255 (UAH) | 3-Jan-97 | 3\3\3 | 150\250\250 | 3434.00 | 33 | 103.02 |
| | TRAVEL TOURS 6 | 111255 (UAH) | 6-May-98 | 3.5\3.5\3.1 | 150\250\0 | 78765.00 | 44 | 2362.95 |
| | GOLDEN TOURS 1 | 111255 (UAH) | 3-Oct-98 | 4\4\3 | 1000\500\500 | 93777.89 | 51 | 2813.34 |
| | GOLDEN TOURS 2 | 111255 (UAH) | 2-Jan-98 | 3\3\3 | 150\250\250 | 32235.00 | 45 | 967.05 |
| | GOLDEN TOURS 3 | 111255 (UAH) | 15-Jun-98 | 3\3\3 | 150\250\0 | 2245.00 | 66 | 67.35 |
| | GOLDEN TOURS 4 | 111255 (UAH) | 12-Jul-98 | 3.5\3.5\3.1 | 1000\500\500 | 667775.00 | 101 | 20033.25 |
| | GOLDEN TOURS 5 | 222335 (USD) | 2-Oct-96 | 3\3\3 | 150\250\250 | 3434.00 | 33 | 103.02 |
| | GOLDEN TOURS 6 | 222335 (USD) | 3-Jan-97 | 3\3\3 | 150\250\0 | 78765.00 | 44 | 2362.95 |
| | RIVER SHOP 1 | 222335 (USD) | 6-May-98 | 3.5\3.5\3.1 | 1000\500\500 | 93777.89 | 51 | 2813.34 |
| | RIVER SHOP 3 | 222335 (USD) | 3-Oct-98 | 3\3\3 | 150\250\250 | 32235.00 | 45 | 967.05 |
| | RIVER SHOP 4 | 222335 (USD) | 2-Jan-98 | 3\3\3 | 150\250\0 | 2245.00 | 66 | 67.35 |

**TEST DATA FOR AUTOMATED PROGRAM
TO SELECT A RANDOM SAMPLE**

| | | | | | | | |
|---------------|--------------|-----------|-------------|--------------|-----------|-----|----------|
| RIVER SHOP 6 | 222335 (USD) | 15-Jun-98 | 3.5\3.5\3.1 | 1000\500\500 | 667775.00 | 101 | 20033.25 |
| RIVER SHOP 7 | 222335 (USD) | 12-Jul-98 | 3\3\3 | 150\250\250 | 3434.00 | 33 | 103.02 |
| RIVER SHOP 8 | 222335 (USD) | 15-Jun-98 | 3\3\3 | 150\250\0 | 78765.00 | 44 | 2362.95 |
| RIVER SHOP 9 | 222335 (USD) | 12-Jul-98 | 3.5\3.5\3.1 | 1000\500\500 | 93777.89 | 51 | 2813.34 |
| RIVER SHOP 10 | 222335 (USD) | 2-Oct-96 | 3\3\3 | 150\250\250 | 32235.00 | 45 | 967.05 |
| RIVER SHOP 2 | 222335 (USD) | 3-Jan-97 | 3\3\3 | 150\250\0 | 2245.00 | 66 | 67.35 |
| RIVER SHOP 11 | 222335 (USD) | 6-May-98 | 3.5\3.5\3.1 | 1000\500\500 | 667775.00 | 101 | 20033.25 |
| RIVER SHOP 5 | 222335 (USD) | 3-Oct-98 | 3\3\3 | 150\250\250 | 3434.00 | 33 | 103.02 |
| RIVER SHOP 12 | 222335 (USD) | 2-Jan-98 | 3\3\3 | 150\250\0 | 78765.00 | 44 | 2362.95 |
| RIVER SHOP 15 | 222335 (USD) | 15-Jun-98 | 3.5\3.5\3.1 | 1000\500\500 | 93777.89 | 33 | 2813.34 |
| RIVER SHOP 14 | 222335 (USD) | 12-Jul-98 | 3\3\3 | 150\250\250 | 78765.00 | 44 | 2362.95 |

Major Activities of Marketing Department

Yurly Kucherenko, Head of Marketing Dept. 7-28-00



1. Concluding Corp Card agreements in an Information Processing function.

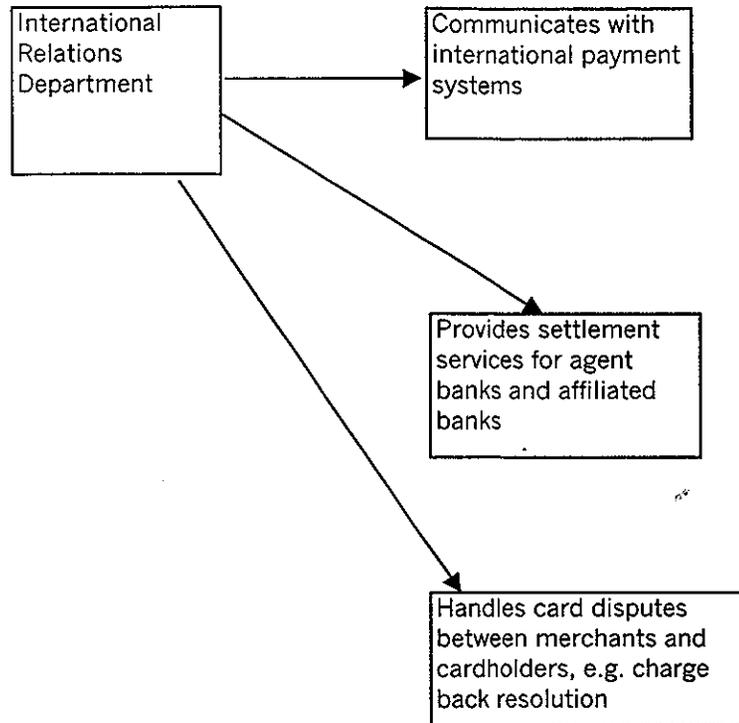
Major Activities of Marketing Department

Marketing Department

1. Develops division marketing strategy
2. Advertises for:
 - a. Cardholders to use merchant services
 - b. Corporate card agreements
 - c. Merchant agreements
3. Concludes:
 - a. Merchant agreements
 - b. Salary payment agreements
 - c. Telecommunication agreements
 - d. Clients of travel agencies when they travel abroad
4. Training of cashiers
 - a. for small branches
 - b. for merchants
5. Issues procedures for small branches
6. Develops forms for card agreements for small branches
7. Locates sites for ATM placement
8. Concludes agreements for ATM placement

International Relations Department

Shasha Gubarev, 7-28-00



Note: Gained good understanding of handling of disputes between cardholders, merchants and affiliated banks and the Card Security Department (outside the CCD) – and the problems involved with credit card fraud and how the bank incurs losses in this area.

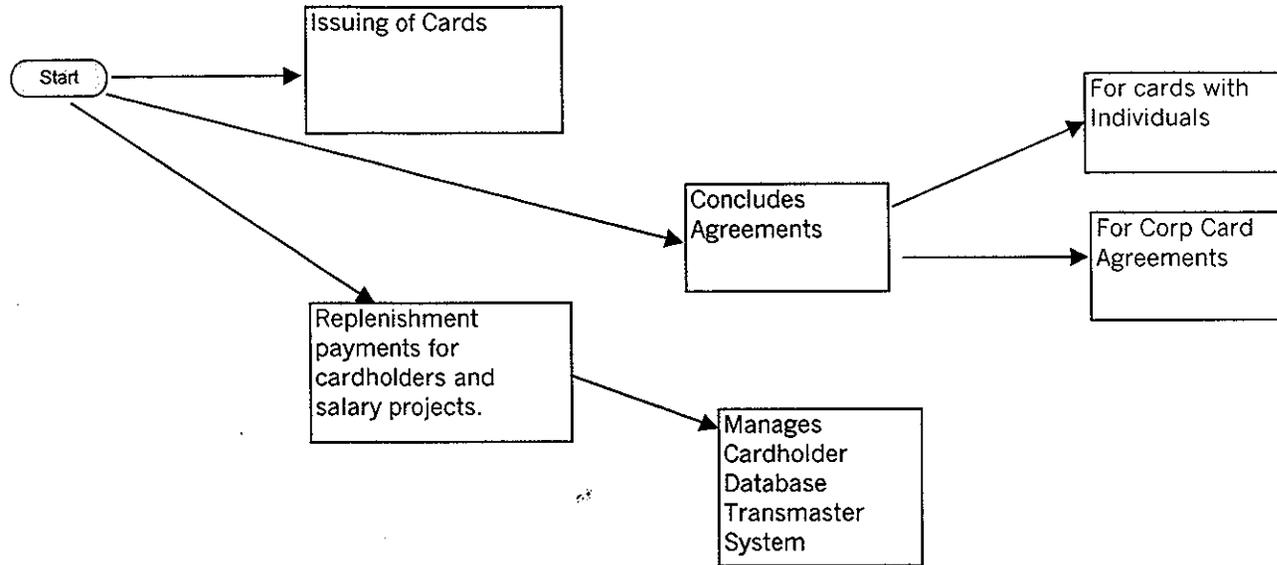
International Relations Department

1. Communicates with international payment systems
2. Settlement services for agent banks and affiliated banks
3. Handles disputes between merchants and cardholders

Information Processing Department

Information Processing Department

Eugene Demyanov, 7-31-00 and 8-3-00
and demonstration of Transmaster System on 8-2-00



Note: First good look at relationship of Cardholder Database and relationship with UPC database -- system demonstration yesterday showed complexity of system design and operation of the Transmaster Cardholder Database.

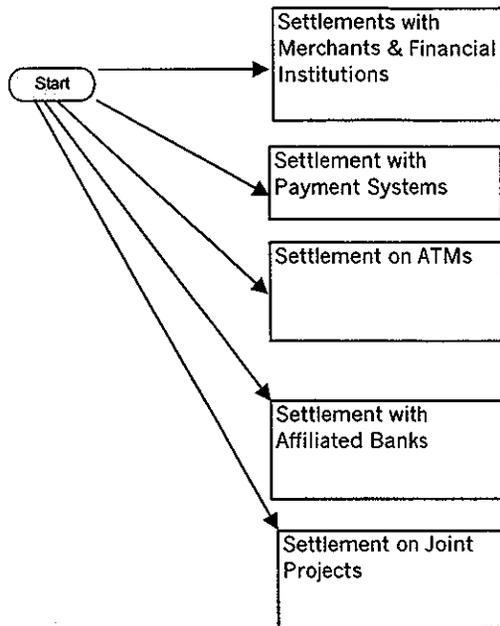
Discovery that there is only one customer account for both debit and credit card activities.

Information Processing

1. Handles issuing of cards
2. Settlements and payments
 - a. Concludes corporate card agreements
 - b. Concludes agreements with individual cardholders
 - c. "Manages cardholder database on Transmaster System" -- ask them what they mean by this.

Plastic Card Transactions Department

Plastic Card Transactions, Oksana Bober, Head, 7-31-00 & 8-3-00



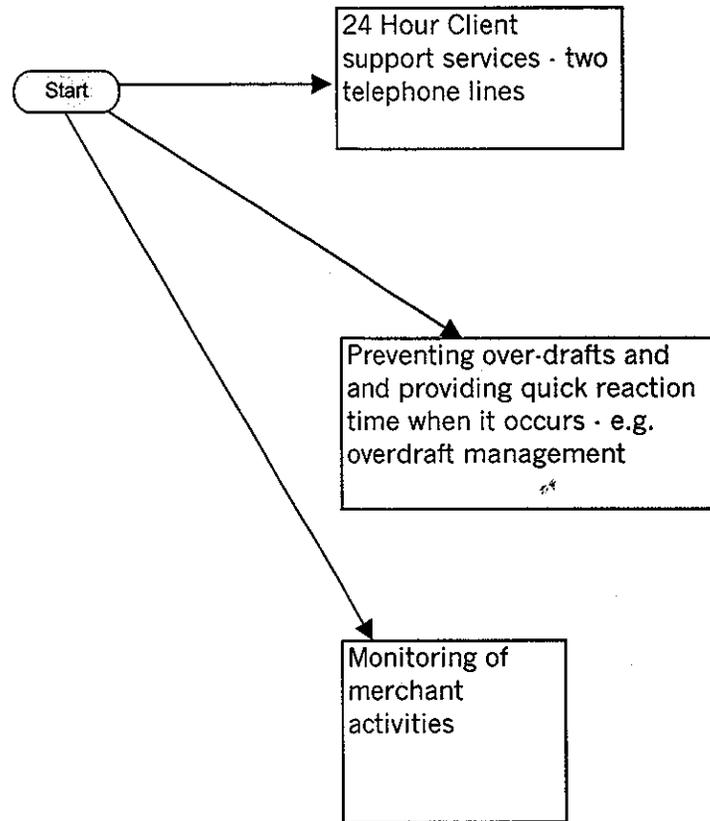
Note: Described the work of her 5 bookkeepers and daily updates of CCD GL. It took some time to relate her daily work to the systems – but it was our first look at these relationships. We gave her copies of some earlier flowcharts and she is reviewing them and making comments to update and validate them.

Plastic Card Transactions Department

1. Settlements with Merchants and Financial Institutions
2. Settlements with Payment Systems
3. Settlement on ATMs
4. Settlement with affiliated banks
5. Settlement on joint projects with other firms

Monitoring Department

Monitoring Department, Igor Nelepa, 8-1-00



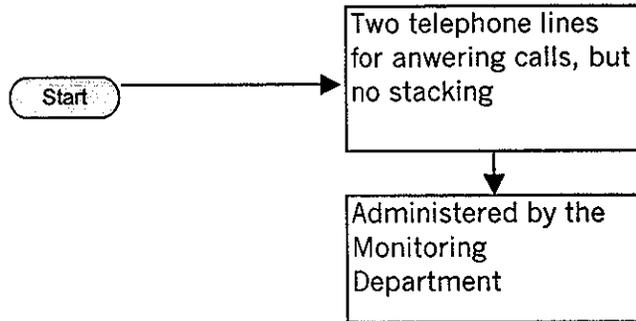
Note: Only 2 telephone lines with no stacking of waiting calls.

Monitoring Department

1. 24 hour cardholder support services
2. Prevent overdrafts and quick reaction time when they occur
3. Monitoring of merchant activities

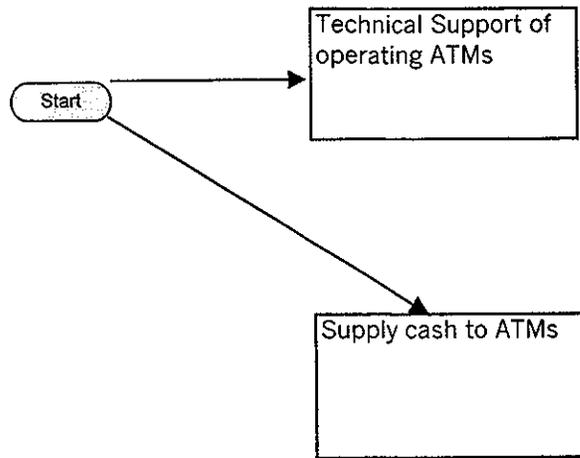
24 Hour Service Hotline Department

24 hour service Hotline



ATM Support Department

ATM Support, Sergy Aletdinov



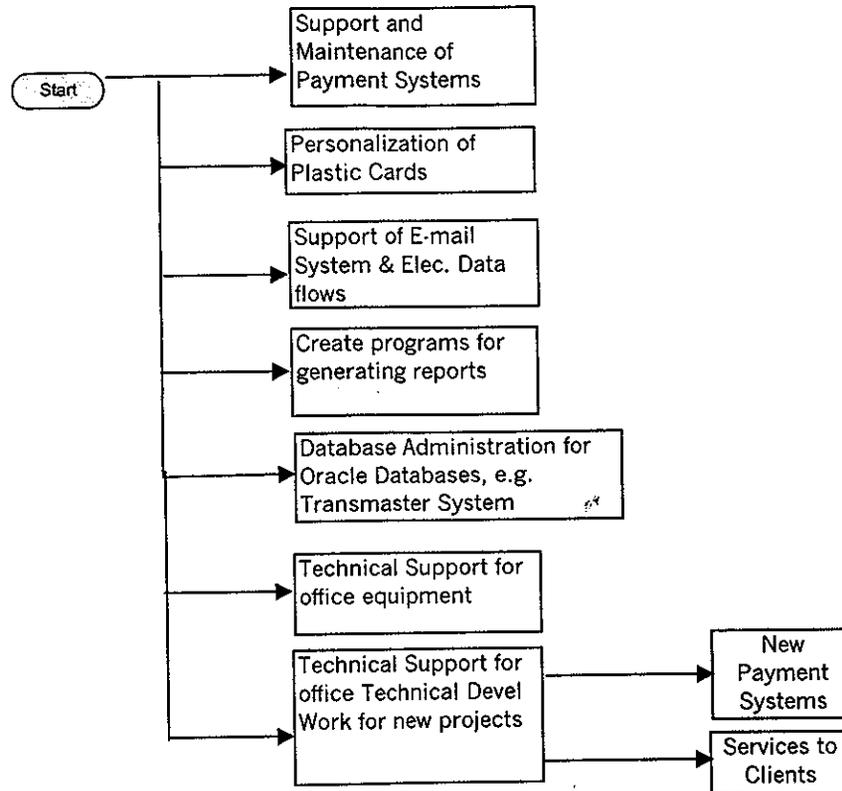
Note: Went into a lot of detail on how the encash ATMs and remove cartridges and relevant controls and safeguards relating to personnel and steps involved. Detailed description of how cardholder DB and accounts are updated and cards are personalized.

ATM Support

1. Technical Support for operating ATMs
2. Supply cash to ATMs

Technical Support Department

Technical Support Department, Eugene Kadema -8-2-00



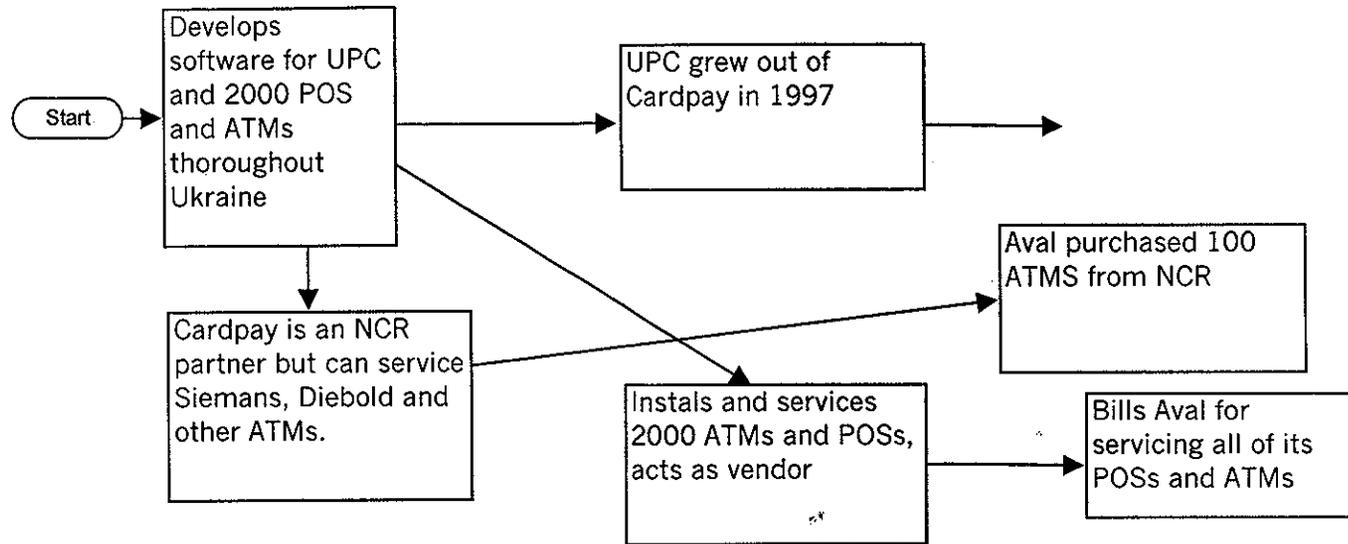
Note: Detailed description of how cardholder DB and accounts are updated and cards are personalized.

Technical Support Department

1. Supports and maintains intra-office e-mail system and electronic document flows
2. Creates programs for generating reports for the other departments
3. Database administration for the Oracle Transmaster System
4. Technical support for office equipment (PC's, printers, workstations, etc.)
5. Technical development work on new projects - programs deal with work related to payment systems and services to clients

International Relations Department

Cardpay, established in 1997, Peter Hnatuk, 8-4-00
Volodmyr Sharayevsky, Managing Director

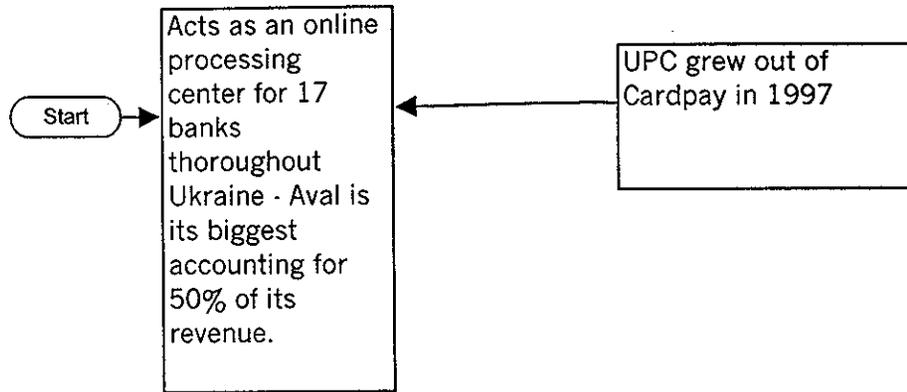


Cardpay, Ltd.

1. Develops software for UPC and 2000 POSs and ATMs throughout Ukraine
2. Instals and services 2000 ATMs and POSs - acts as vendor.
3. Bills Bank Aval for servicing all of its POSs and ATMs.

International Relations Department

UPC (Ukrainian Processing Center), established in 1997, Grew out of Cardpay, Peter Hnatuk, 8-4-00
Volodmyr Sharayevsky, Managing Director



Note: Detailed description of how cardholder DB and accounts are updated and cards are personalized was provided.

UPC - Ukrainian Processing Center.

1. Online processing center for 17 Ukrainian Banks
2. Aval Bank is its biggest client bank accounting for 50% of its gross revenue.

Cardholder and Corporate Card and Salary Agreements

Personalization of Plastic Cards

Replenishment of Accounts

**Merchant Agreements and Settlements
and International Clearing**

Audit Procedure

Merchant Agreements

Concluded by the Marketing
Department

Cashiers of Merchants trained by
Marketing Department

Credits to Merchants' Accounts

Transactions come to UPC

Those with POS terminals come
in by dial up or leased line
connections
Some bring in diskettes
Those with manual card devices,
send in their slips to Bank Aval

Transactions sent by leased line to Bank
Aval to Plastic Card Transactions
Department for settlement

Entered into Bank's Transmaster
system

Charges against Cardholder Accounts

Settlement with international payment
systems

Agreements for ATMs

Location of ATMs

Encashment and Servicing of ATMs

EXHIBIT V

Aval – Bank Customer Deposit and Plastic Card Payment Systems

JOINT STOCK POST-PENSION BANK "AVAL"

AVAL BANK

BANK CUSTOMER DEPOSIT AND PLASTIC CARD PAYMENTS SYSTEMS

DIAGNOSTIC AND ACCOUNTING ENHANCEMENT RECOMMENDATIONS

SEPTEMBER 2000

submitted by

International Business & Technical Consultants, Inc.

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Ukrainian Bank Accounting and Operations Infrastructure Development Project

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13 September 2000

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

1 EXECUTIVE SUMMARY

The main focus of the assignment is to review the accounting and information process of Aval Bank's Plastic Card Division. The scope of work is to review and propose improvements to the Card accounting process and how to provide a controlled interface with the deposit accounting system in Aval.

1.1 SUMMARY RECOMMENDATIONS

Reorganize the Plastic Card division to focus the card operations on control functions (See 4.1.1 below)

Since there is no acceptable sub-ledger deposit application system available at Aval Bank for debit card accounts, or sub-ledger loan accounting for credit card accounts, it is recommended that Aval take the following action.

1.2 IMMEDIATE RECOMMENDATIONS FOR CARDS

Invest immediately in a minimal enhancement effort to,

- organize and manage the Transmaster database and system as a sub-ledger accounting system (See 4.1.2 to 4.1.7 below)
- develop a control sub-system "around" the Transmaster database
 - for deposits/liabilities (debit cards) and credits/assets (credit cards)
 - to record batches, detail entries, sub-totals and totals for the four intra-day updates and for a day's complete cycle of activity
 - to provide greater detail and better control over the Operating Day postings from debit/credit card transactions

Add Merchants accounts to an accounting system for merchant credits, commissions, etc.

- an immediate option is to add the merchants as analytical accounts to Operating Day
- eventually, the merchants should have deposit accounts in the same sub-ledger as all deposit accounts

Develop a comparison and reconciliation process for Aval Transmaster vs. UPC Transmaster. For the immediate term, the process can be relatively simple, for reconciling,

- Customers, accounts and cards, and
- Balances; blocked and available

1.3 INTERMEDIATE/LONGER TERM RECOMMENDATIONS FOR CARDS

Expedite the acquisition and installation of the IFS TP-II card processing and management solution (Also consider other back-office card management software, such as, IFS TP-CMS).

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

Acquire and install a capable deposit accounting solution and a loan accounting solution for the card accounts, either by,

- expediting ROBIN development to provide deposits and loans with the necessary functions, or,
- buy and implement a proven software solution from a proven vendor

1.4 IMMEDIATE/INTERMEDIATE RECOMMENDATIONS FOR IN HOUSE SYSTEMS

The ROBIN system, which is the early stages of an Aval Bank in-house development of a core banking systems solution, lacks many basic Customer and Deposit functions that are considered standard for a commercial banking solution (see Appendix 5.1 for systems requirements). According to bank management, Aval Bank has decided not to continue with banking systems development using the IBIS consulting company. Consequently, the Bank has undertaken an in-house development effort that is a change from the IT Strategic Plan developed for 2000.

It is strongly suggested that Aval Bank re-consider the current in-house development of its banking systems.

Aval management should reassess the feasibility of Aval Bank acquiring package software for the Bank's systems solutions.

- Consider that the investment in ROBIN to-date is minimal.
- Explore all possible funding options; capitalization, third party leasing, partial sub-system migration vs. total core-banking installation, etc.
- Invite 4 – 5 Internationally well-known Banking Software vendors to give presentations on their package solutions; include ALL relevant Bank staff, end-users from branches and head office, procurement, IT, and Audit.
- Packages have proven internal control, balancing and international accounting standards including flexibility for domestic nuances.
- In-house systems development is one of the highest risks a bank can encounter.
- Packages are supported by:
 - knowledgeable support teams
 - end-user associations
 - complete documentation
 - complete systems for many countries, accounting methods and different size banks.

If the Bank decides that an in-house development is still the only option available, then the ROBIN development effort should be expedited and enhanced.

- the ROBIN development effort should be pursued under a prototype development methodology
- the development effort and methodology should be enhanced by:

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

- inviting internationally known Commercial Banking Solution providers to present demonstrations and marketing brochures of their respective "core banking" application systems solutions (if not done as part of "build vs. buy" decision)
- defining and creating an end-user and auditing advisory team to provide banking business and internal control functional input to the development specifications
- enhancing the development team with outside senior banking business analysts with expertise in contemporary commercial banking systems
- developing system and end-user documentation (e.g., add objects to display screens or online help integrated within the ROBIN system)
- installing a "Change Management" process to mitigate the risks of in-house development by communicating progress and activities that may impact different areas of the Bank
- installing a "Release Control" methodology to assure properly prepared (tested and signed-off) and carefully distributed iterative versions of software

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

2 INTRODUCTION AND BACKGROUND

The Aval Bank in Kiev, Ukraine began offering the banking payments services of plastic cards, including debit cards and credit cards, to individuals and corporations approximately three (3) years ago.

The Bank developed the card payment business, the internal bank operation and the internal transaction control gradually via the natural process of add-on departmental functions as needed, plus assistance and instruction from the international payment systems, e.g., VISA, MasterCard, Eurocard, etc.

As a result of trying to be responsive to the market and install the necessary processes as quickly as possible, an overall coordinated and integrated card payment process with other interdependent banking systems was not realized.

Although a sub-ledger system is being used to account for the balances, transaction accountability, control of the accounts and supporting the use of the card payments, the system is not functionally adequate or integrated with the required other banking systems. These other systems include, e.g., deposit accounting, loan accounting, general ledger, customer information, and external international payment systems.

The sub-ledger system, known as "TransMaster", provided by the vendor Konts from Riga, Latvia was incomplete, with some functions containing processing errors, when originally installed. Due to the rapid growth of the business, the "learn as you go" development process of the Bank users, the minimal support from the software vendor, the TransMaster system has not been enhanced to the necessary level of internal control and integration to other bank systems.

This sub-ledger system is installed and used in Aval Bank and is closely integrated with another similar TransMaster database used for intra-day authorizations. The intra-day database is installed in the Ukrainian Processing Center (UPC).

In addition, no effort has been made to install a surrounding and supportive control sub-system for the TransMaster database at Aval, the Intra-day TransMaster authorization database, or for the interfaces to general ledger or deposit accounting.

As a result of this lack of control to transparently report the accuracy and data integrity of the plastic card database and transaction processing, there exists some doubt as to the accuracy and appropriateness of the figures posted to the general ledger for the plastic card business.

The Senior Management at Aval Bank is concerned that assets and liabilities are not reported completely and accurately.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

2.1 PURPOSE AND OBJECTIVES

The main focus of the assignment is in the accounting and information process area of the Plastic Card Division. The understanding is to review and propose improvements to the Card accounting process and how to interface with the deposit accounting system in Aval.

More specifically, to provide the Client, Aval Bank, with suggested improvements to the accountability, reconciliation, data control and management information of the information capture, process, storage, retrieval and display of the Customer transactions initiated using plastic cards.

The task will consist of the following components:

- Discovery and review of current plastic card transaction and deposit accounting processing, for individuals, corporations and merchants
- Assessment of the effectiveness, completeness, accuracy and timeliness of the card payment transaction process and the deposit accounting systems
- Recommendations for re-engineering the card transaction process and probable integration with the deposit accounting sub-ledger system, including the data controls for the intra-day authorization data base, the Aval card account sub-ledger data base and the Aval Operating Day (general ledger) data base.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

2.2 SOURCES DOCUMENTS AND INTERVIEWS

The following source information for studying the current situation was provided and found to be very helpful.

2.2.1 Documents

Technology Cards are used to develop a working relationship between the employee and the Bank. It should be noted that, although every attempt is made within the Technology Cards to define a work responsibility completely, there are always special conditions that arise in a day that must be handled that may not be specifically included in the Technology Card description. Job descriptions should leave some room for interpretation and additional tasks that either, come up extemporaneously, or are recognized as needed but not described.

It appears that the narrow focus of the Technology Cards allows for the lack of an overall view of the function and concern for data control.

Plastic Card Division Technology Cards

Marketing Department

___ . Sale and sign-up Sale of Plastic Cards

International and Inter-bank Liaison

90. Bonus Payment for Seizure Finding of Plastic Cards

91. Charge backs

Information Processing

103. Processing of Payrolls Received via E-mail (Salary Projects)

125. Information Processing Department Technology Card

Plastic Card Transactions

95. Settlements with Payments Systems

96. ATM Operation

97. Settlements with Merchants

133. Settlements with VISA-UMC Cards

134. Settlements with Affiliated Banks Europay Members

Monitoring Department

___ . 24 Hour Cardholder Service Regulation

___ . Monitoring Department Charter

105. AVAL Bank Regulation on Plastic Card Overdrafts

ATM support

99. On ATMs

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

Technical Support

101. Personalization of Plastic Cards, 2000

102. Payment Card System Administrator Job Description

Retail Non-Trade Department Synopsis

Services and supporting systems

Other documents provided to understand the conditions at Aval Bank and the Ukrainian Processing Center (UPC).

Aval Bank Master Organization Chart, March 2000

Aval Credit Card Division, 28 July 2000

Transmaster User Manual, Issuing, Part 1: Client, Accounts and Cards

Transmaster User Manual, Issuing, Part 4: Monthly Processing

Card Pay Brochure

Ukrainian Processing Center (UPC) Brochure

UPC Strategic and Business Planning Document

Card Pay Strategic and Business Planning Document

IFS International, Inc.

Corporate Brochure

TPII EFT Management System, Product Summary Document

TP-CMS Issuer and Merchant Functions and Facilities

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

2.2.2 Interviews/Discovery Meetings

The following interviews and visits were conducted during the assignment. The topics covered developing an understanding of the scope of work, Aval's specific concerns, workflow description and analysis, and the condition of various data systems at the Bank.

Jakov V. Smolij, Deputy Chairman of the Board
Ivan Voloshchuk, Aval Chief Account
Peter A. Hnatluk, Director Division of Retail Banking
Eugene Plotitsa, Deputy Director of Retail Banking
Andriy V. Smilyanets, Chief of Information Technology Department
Andriy B. Dzubatiy, Deputy Chief of Information Technology Department
Yurly Kucherenko, Marketing Department, Card Division
Shasha Gubarev, International Relations Department, Card Division
Eugene Demyanov, Information Process Department, Card Division
Oksana Bober, Plastic Card Transactions Department, Card Division
Igor Nelepa, Monitoring Department, Card Division
Sergy Aletdinov, ATM Support Department, Card Division
Eugene Kadema, Technical Support Department, Card Division
Kalinouska Nataliya Ivanovna, Deputy Chief Accountant, Foreign Exchange
Velichko Nina Vasilievna, Deputy Chief Accountant, Plastic Cards

Chenirhiv Branch

Aval Deposit Accounting System (ROBIN) Development and UAT (User Acceptance Testing) Test Site

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

3 SITUATION DISCOVERY AND ANALYSIS

The discussion regarding the current conditions at Aval bank for the plastic card account and transaction processing, and the deposit account and transaction processing are handled separately in the following sections. The Plastic Card organization, systems and processes are separate at this time. The subsequent recommendations bring the processes and systems together.

3.1 PLASTIC CARD DIVISION

The Plastic Card business and supporting bank organization has been developing over the last three years. The business was initiated in approximately 1997 and has been growing ever since. Based on the figures provided, the rate of growth has been about 5-10% every month such that the business doubles about every year.

Generally, the Ukrainian retail banking market has not, and still does not trust doing business with banks, especially deposits for safekeeping. Banks have historically had a difficult time acquiring retail deposits and subsequently using the funds to invest in lending or other earning assets.

With the combination of direct deposit payrolls ("salary projects") and card technology (ATM's, POS devices) Aval Bank has grown the retail deposits and debit card business. The credit card business has grown as well, but not nearly as much due to the lack of credit worthy individuals.

Since Customers can access their salaries quickly and directly at these card devices, the Customers are leaving their money in the accounts and the balances are growing. The success of the product (i.e., direct salary deposit and debit card), has encouraged additional card business that now needs better systems and data control.

Aval management developed the Plastic Card Division as the business grew by adding sections responsible for specific aspects of the card business, e.g., new account, payments/replenishments, charges, merchant settlements, payment network settlements, affiliate/agent reconciliation, plastic embossing, etc.

Plastic Card Transaction System

An inexpensive card processing system was acquired from a small software vendor from Riga, Latvia. The system was actually designed to be the front-end intra-day transaction approval system and, in addition, was never thoroughly tested or prepared for live transaction processing. The system is called Transmaster (TM) and has no sub-ledger accounting processes or reports. Additionally, none of the individuals that work with the system trust the reporting that the system produces.

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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

One form of the Transmaster (TM) system is installed in a front end payments processing service center that also provides the "switch" that communicates with the card devices for cash and trade (ATM's, POS), and the international payment systems/networks (e.g., VISA, Euro MasterCard, cirrus, etc.)

Another form of Transmaster is installed in Aval Bank and is used to record the Customer, Accounts and cards. This form of TM is posting deposits, payments, charges and withdrawals, and being used as a deposit sub-ledger system but lacks any overall controls.

Additionally, the debit card accounts and the credit card accounts are on the same Transmaster. This is proper for front-end authorization but not for sub-ledger accounting.

Data Controls

The separate sections of the Plastic Card division (see 3.1.1 below) process their respective transactions, however, normal standard posting procedures and verification of successful updates are not followed. For example;

- charges are posted directly by the plastic card technical staff from files provided by UPC without any audit trail or journal such as batch detail or totals,
- payments are extracted from general ledger cash desk recordings and then re-keyed and staged for processing without further verification of successful posting,
- salary payments are received via files or keyed in and staged for processing without further verification of successful posting,

Basically, each section focuses on their respective transaction responsibility, but there is no overall accounting control, which would normally begin with the start-of-day (SOD) balance, apply intra-day transactions and prove to the end-of-day (EOD) balance.

In addition, detail listings of batches of work do not exist or are not readily available. The postings to general ledger are provided in bulk figures with no detail backup for verification. During some of the discovery meetings, errors or rejected transactions were noticed and there was no known explanation.

The operating assumption is that if each transaction is properly posted then the whole must be correct. There are no procedures to verify that all transactions that should have posted, in fact did, or are identifiable as a reject to be corrected and re-entered later. See 3.1.2 below showing separate processes but no overall control.

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Bank Customer Deposit and Plastic Card Payments Systems

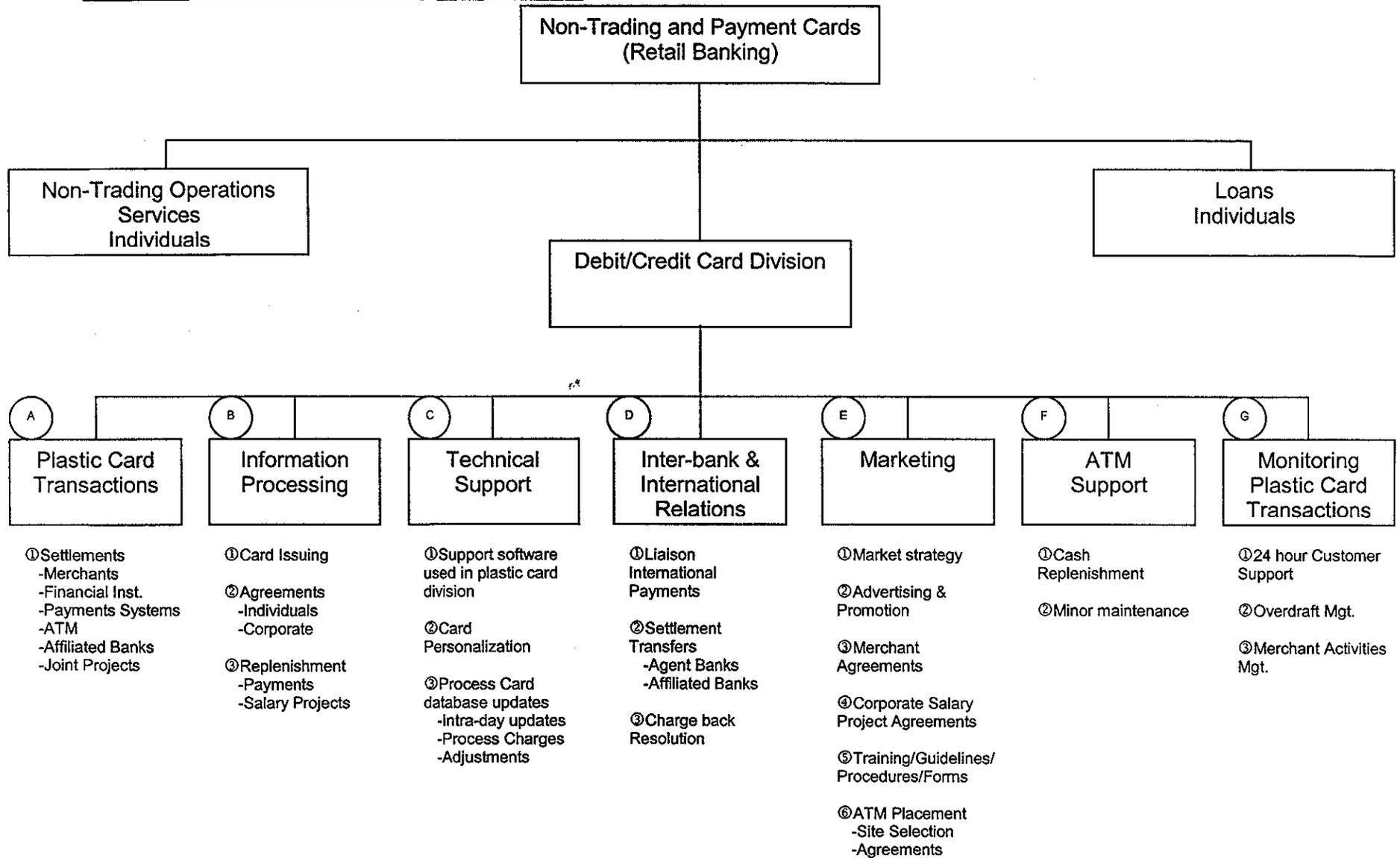
Diagnostic and Accounting Enhancement Recommendations

Since the card business is growing significantly, some internal data control and account sub-ledger balancing should be installed. The recommendations section of this report offer some short term and longer term solutions to this control problem. See 4.1.1 – 4.1.7.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

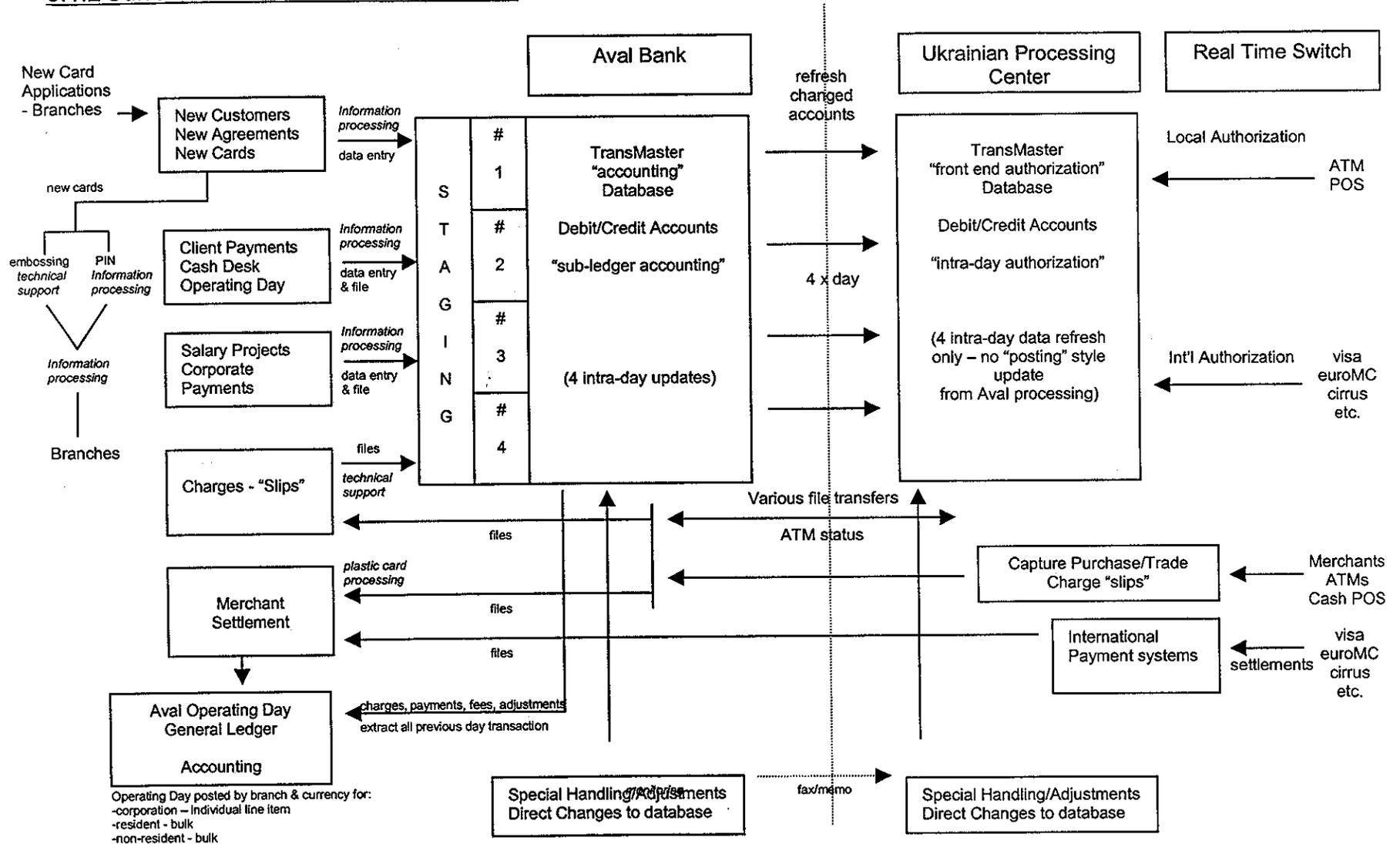
3.1.1 Current Plastic Card Division Organization



Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

3.1.2 Current Plastic Card Transaction Flow



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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

3.2 DEPOSIT ACCOUNTING SYSTEMS

Aval management recognized shortly after the inception of the Plastic card business that the debit card service requires a sub-ledger account for replenishment of funds, such as, payment of salary deposits, individual deposits, funds transfers and the appropriate card transactions (withdrawals).

In an attempt to identify an existing system at Aval that could be used as sub-ledger accounting for the debit cards, the following assessment and conclusions developed.

3.2.1 Existing Systems

The existing systems in Aval Bank that approximate deposit accounting functionality are, by all opinions solicited, inadequate for any future use. These systems are known as,

- "Sberbank" for pension savings, and
- "ISAOD OVO" for transactions requiring funds on demand, e.g., individual deposits, receiving payments, foreign currency funding, money transfers, transacting travel checks, etc.

There are other systems focused on payment transactions (e.g., ChekMate/Thomas Cook, in-house check sale/receiving, Visa Travel Money/Thomas Cook, FOREX transactions, etc.). Separate local consulting companies have provided these systems.

At a very cursory level of review, the systems are focused on recording transactions and have no broad architectural view of Customer, Customer grouping or Deposit balance accounting at a sub-ledger level, or in support of Bank Management Reporting (MIS). They also are criticized for errors and being difficult to use. These systems were not pursued any further as a possible solution to recording and managing the card accounts.

3.2.2 New Deposit System:

The Aval Bank IT Department is currently developing, in-house at the Chenirhiv Branch location, a deposit sub-system of what is intended to be eventually the Bank's "core banking" systems solution. According to bank management, Aval Bank has decided not to continue with banking systems development using the IBIS software development company. Consequently, the Bank has undertaken an in-house development effort that is a change from the IT Strategic Plan developed for 2000.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

The system was reviewed to evaluate the potential use to record debit card accounts, and as an overall solution to Aval Bank's future banking systems needs.

The system is code named "ROBIN" and is developed using contemporary IT development tool sets (e.g., "Power Builder", Sybase database management software, TCP/IP LAN and WAN network protocol, "Clipper", etc.)

Functionally, the system can record Customers, term deposits (Time and Certificates), demand deposits, savings, currency exchange transactions, and payment orders transactions (e.g., pay invoices, pay bills, transfer funds intra-bank and inter-bank).

The "ROBIN" system does not process current accounts that are used for Customers' inter-bank funds transfer transactions. All current accounts are directly posted as "analytical" line items in the Bank's general ledger. Inter-bank transfers are initiated at the Bank ledger level and the banking regulations require that the customer account be posted subordinate to and within a general ledger line item.

ROBIN Assessment

The ROBIN development effort has only been ongoing since March 2000. The intent is to expand the functionality and include other deposit accounts and also loan accounts. At this stage ROBIN is a very elementary branch banking system. The system should be given much more development effort and strenuous testing, with user involvement before installing in any Branch:

The ROBIN system lacks the following basic Customer and Deposit functionality to make it a complete solution for Commercial Banking or adequate for the debit card accounts (see Appendix 5.1 for deposit systems requirements):

Customer missing:

- Corporate Holding Company and Subsidiaries
- Family grouping known as "House-holding"
- Customer Relationship Management (linking all accounts, cards, products, and services for easy viewing by Bank officers or MIS reporting)
- Customer Demographics (personal, employment, etc.)
- Central Head Office view of Customer
- Systematic linkage to multiple accounts of one Customer, e.g., multiple deposits, loans, cards, etc.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

Deposit Accounting:

- Current Accounts
- Overdraft accounting
- Debit Card accounts
- Funds Management and automatic transfer instructions
- Statements
- Operational and Management reporting
- Central Head Office view of Deposit liabilities

Development Methodology:

- Low to No User involvement
- No audit involvement
- No documentation for requirements, systems specifications, business or technical user
- Uses distributed "book" architecture (customer and account level data at regional branch level) that will require end-of-day processing at all regional branches (70+) and local cash desks (1000+), plus extensive balancing and reconciliation between layers, i.e., cash desks, branches, regional branches, central office and head office.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4 RECOMMENDATIONS

After assessing the systems situation at Aval Bank in regards to the accounting requirements of the Plastic Card Division, the following recommendations are offered.

4.1 IMMEDIATE RECOMMENDATIONS FOR PLASTIC CARDS

Reorganize the Plastic Card division to focus the card operations and control functions together and under an overall control responsibility. See 4.1.1 below. Develop Technology Cards that focus on controlling the Transmaster data day to day.

Since there is no acceptable sub-ledger deposit application system available now, or in the near term (i.e., one year) at Aval Bank for debit cards and credit card account, it is recommended that Aval take the following action.

Invest immediately minimal enhancement effort to organize and manage the Transmaster database and system as a sub-ledger accounting system. A control sub-system can be developed "around" the Transmaster database and process without a large effort. This effort should be done with in house personnel.

Develop an overall control sub-system of the Transmaster database and system. See 4.1.2 –4.1.7

- Develop a control sub-system for the deposits/liabilities (debit cards) recording batches, detail entries, sub-totals and totals for the four intra-day updates and for a complete day's cycle.
- Develop a separate control sub-system for the credits/assets (credit cards) with the same details as for deposits.
- Develop greater detail journal for Operating Day postings from debit/credit transactions

Add Merchants accounts to an accounting system for merchant credits, commissions, etc. The first suggestion is to add the merchants as analytic accounts to Operating Day. The Merchants should have deposit accounts in the same sub-ledger as all deposit accounts.

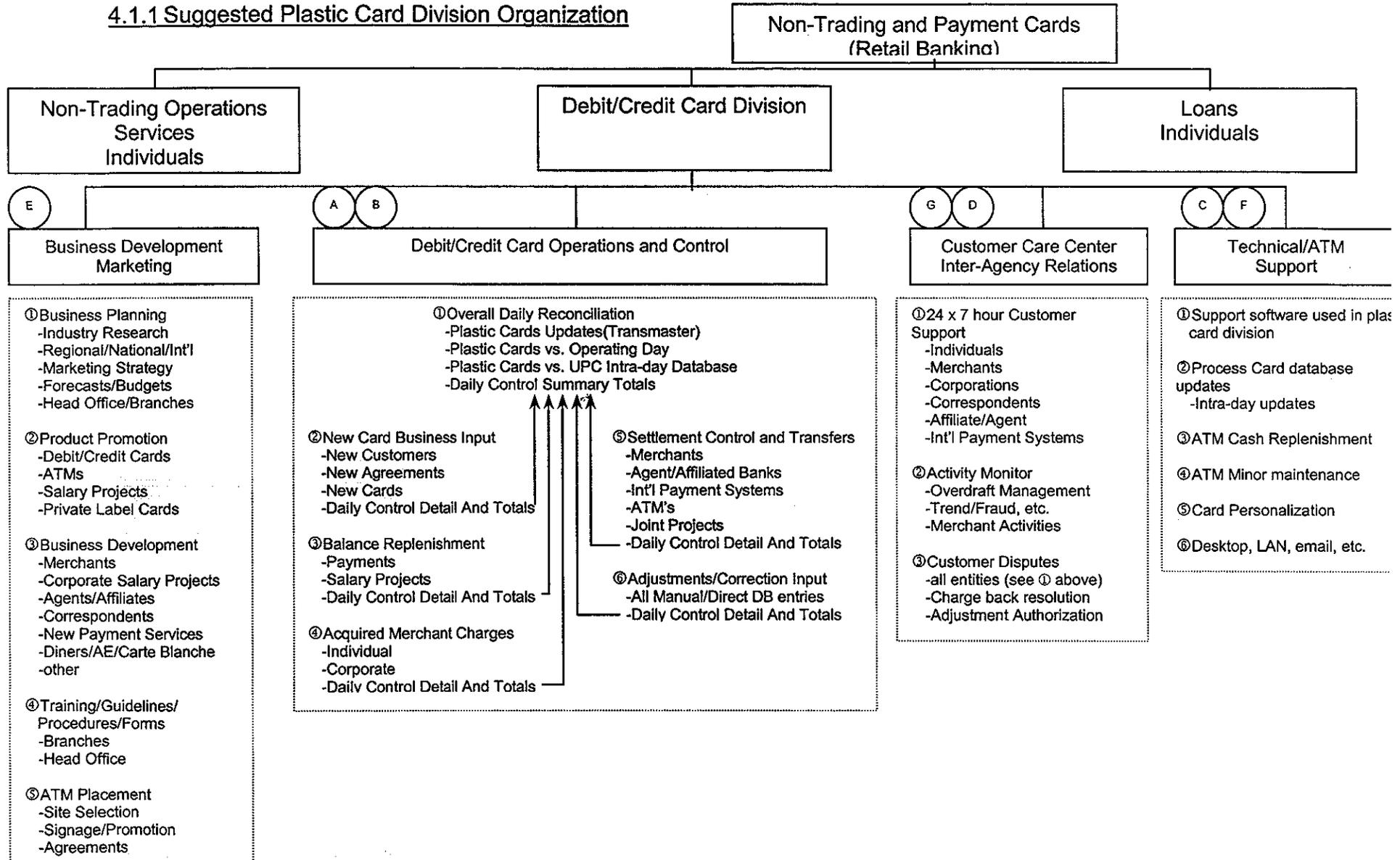
Develop a comparison and reconciliation process for Aval Transmaster vs. UPC Transmaster. For the immediate term, the process can be relatively simple, for reconciling,

- Customers, accounts and cards, and
- Account gross balance, blocked approvals, and available balance

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

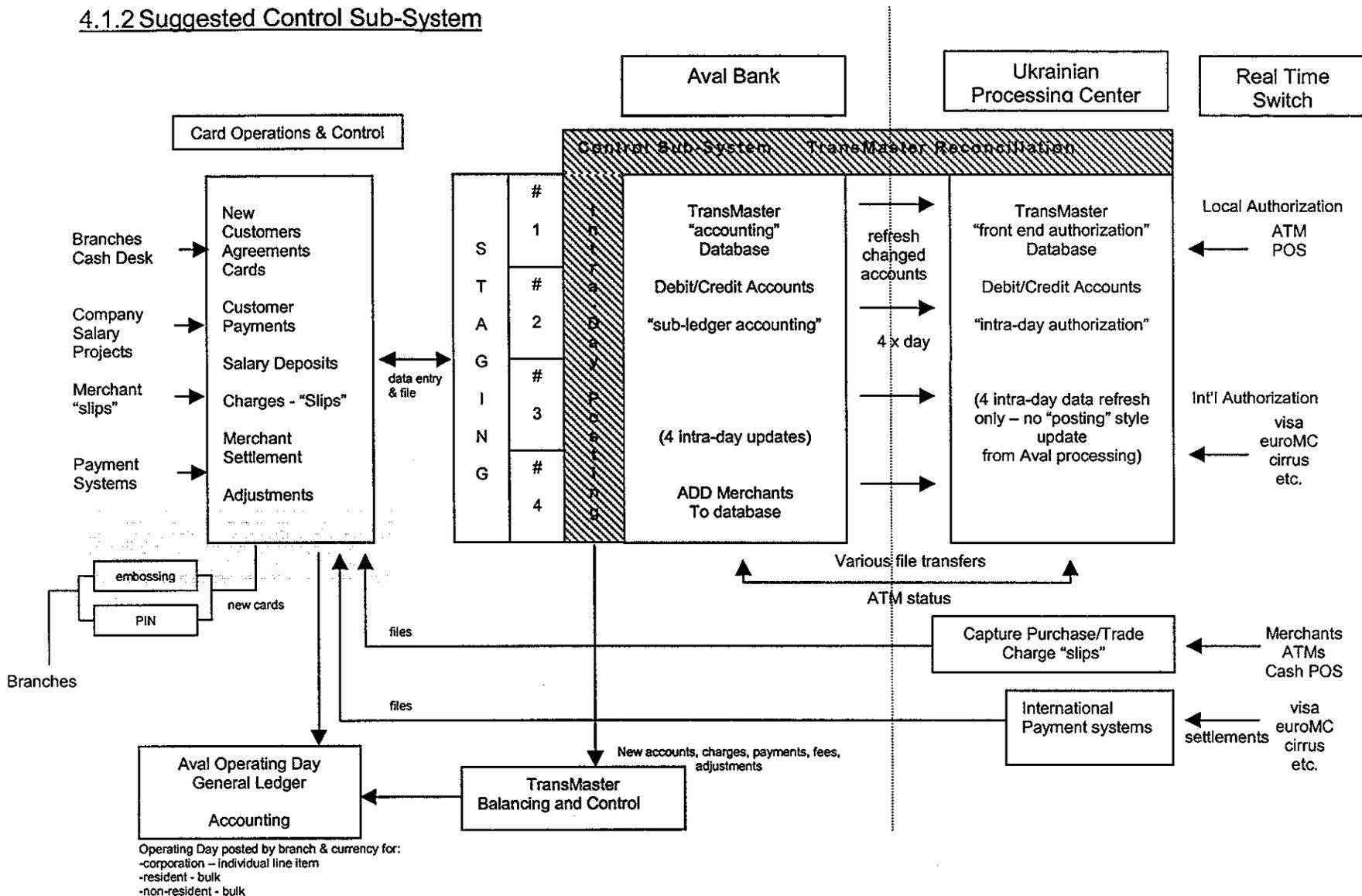
4.1.1 Suggested Plastic Card Division Organization



Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.1.2 Suggested Control Sub-System



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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.1.3 Summary Control Report

This control report is for summarizing all the intra-day updates (usually 4) for the entire day. This report would be used to control the Transmaster and reconcile with Operating Day entries.

| | Aval Debit/Credit Card Control Report | | | | Date: 28 August 2000 |
|-----------------------------|---------------------------------------|-----------|-------------------------|---------|---------------------------|
| | | | | | Time: 19:10 |
| | | Customers | Item Counts Accounts | Cards | Deposit/Liability |
| Loan/Excess | | | | | Loan/Asset |
| Beginning Balance | UAH | 150,000 | 175,000 | 200,000 | 999,999.99CR 999,999.99DR |
| 99,999.99DR | USD | 150,000 | 175,000 | 200,000 | 999,999.99CR 999,999.99DR |
| 99,999.99DR | | | | | |
| No.1,2,3,4... Daily Process | | | | | |
| + New Customers/Accts/Cards | UAH | 50 | 50 | 50 | 5,000.00CR .00 |
| 500.00DR | USD | 50 | 50 | 50 | 5,000.00CR .00 |
| + 500.00DR | | | | | |
| (Closed Cards) | | (5) | (5) | (5) | |
| + Payments | UAH | | | + | 100,000.00CR 50,000CR |
| 10,000CR | USD | | | + | 100,000.00CR 50,000CR |
| 10,000CR | | | | | |
| + Salary Projects | UAH | | | + | 100,000.00CR 50,000CR |
| 10,000CR | USD | | | + | 100,000.00CR 50,000CR |
| 10,000CR | | | | | |
| - Acquired Charges | UAH | | | - | 100,000.00DR 50,000DR |
| 10,000DR | USD | | | - | 100,000.00DR 50,000DR |
| - 10,000DR | | 10,000DR | | | |
| - ATM Cash | UAH | | | - | 100,000.00DR 50,000DR |
| 10,000DR | USD | | | - | 100,000.00DR 50,000DR |
| - 10,000DR | | 10,000DR | | | |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| | | | | | | |
|----------------------|-----|---------|---------|---------|--|---------------------------|
| + Adjustments | UAH | | | | | + 100,000.00CR 50,000CR |
| 10,000CR | USD | | | | | + 100,000.00CR 50,000CR |
| 10,000CR | UAH | | | | | - 100,000.00DR 50,000DR |
| - Adjustments | USD | | | | | - 100,000.00DR 50,000DR |
| 10,000DR | | | | | | |
| 10,000DR | | | | | | |
| Ending Balance | UAH | 150,050 | 175,050 | 200,050 | | 999,999.99CR 999,999.99DR |
| 99,999.99DR | USD | 150,050 | 175,050 | 200,050 | | 999,999.99CR 999,999.99DR |
| 99,999.99DR | | | | | | |
| (Total Closed Cards) | UAH | 14,005 | 14,005 | 14,005 | | 999,999.99CR 999,999.99DR |
| 99,999.99DR | USD | 10,005 | 14,005 | 14,005 | | 999,999.99CR 999,999.99DR |
| 99,999.99DR | | | | | | |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.1.4 New Business Detail Control Report

The control sub-system should record all the new business and provide detail to support the summary totals listed above for each intra-day update processed against the Transmaster in Aval.

Report Id: 'new business detail'
28 August 2000

Aval Debit/Credit Card New Business Report

Date:

Time:

19:10

| No.1,2,3,4... Daily Process | Customer Number | Account/Agreement # | Card Number | Type |
|-----------------------------|-----------------|---------------------|------------------|----------|
| | 9999999999 | | | Customer |
| | 9999999999 | 9999999999 | | Account |
| | 9999999999 | 9999999999 | 9999999999999999 | Card |
| Total New | UAH | 50 | 50 | 50 |
| | USD | 50 | 50 | 50 |
| (Closed Cards) | | | | (5) |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.1.5 Card Account Replenishment Control Report

Replenishment/Payment Report is printed for the input to each intra-day cycle.

Report Id: 'replenishment detail'
2000

Aval Debit/Credit Card Replenishment Control Report

Date: 28 August

Time: 19:10

| No.1,2,3,4... Daily Process | Customer Number | Account/Agreement # | Val. | Amount |
|-----------------------------|-----------------|-------------------------------------|------|----------------|
| Batch ID: xxxxxxxxxxx | | Type: salary project | | |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| | 999999999 | 999999999 | UAH | 999,999,999.00 |
| Total: xxxxxxxxxxx | | | UAH | 999,999,999.00 |
| | | | USD | 999,999,999.00 |
| Batch ID: xxxxxxxxxxx | | Type: individual/corporate payments | | |
| | 999999999 | 999999999 | USD | 999,999,999.00 |
| | 999999999 | 999999999 | USD | 999,999,999.00 |
| | 999999999 | 999999999 | USD | 999,999,999.00 |
| | 999999999 | 999999999 | USD | 999,999,999.00 |
| | 999999999 | 999999999 | USD | 999,999,999.00 |
| | 999999999 | 999999999 | USD | 999,999,999.00 |
| Total: xxxxxxxxxxx | | | UAH | 999,999,999.00 |
| | | | USD | 999,999,999.00 |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.1.6 Card Account charges Detail Control Report

Charges Detail Report printed for the input to each intra-day cycle.

Report Id: 'charges detail'
2000

Aval Debit/Credit Card Charges Report

Date: 28 August

Time: 19:10

| No.1,2,3,4... Daily Process | Customer Number | Account/Agreement # | Val. | Amount | Card Type |
|-----------------------------|-----------------|---------------------|------|----------------|-----------|
| Batch ID: xxxxxxxxxx | 999999999 | 999999999 | UAH | 999,999,999.00 | Visa |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | MC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | EMC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | EMC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | MC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | MC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | MC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | MC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | MC |
| | 999999999 | 999999999 | UAH | 999,999,999.00 | MC |
| Total: xxxxxxxxxx | | | UAH | 999,999,999.00 | |
| | | | USD | 999,999,999.00 | |
| Batch ID: xxxxxxxxxx | 999999999 | 999999999 | USD | 999,999,999.00 | Maestro |
| | 999999999 | 999999999 | USD | 999,999,999.00 | Visa |
| | 999999999 | 999999999 | USD | 999,999,999.00 | Visa |
| | 999999999 | 999999999 | USD | 999,999,999.00 | Visa |
| | 999999999 | 999999999 | USD | 999,999,999.00 | Visa |
| | 999999999 | 999999999 | USD | 999,999,999.00 | Visa |
| Total: xxxxxxxxxx | | | UAH | 999,999,999.00 | |
| | | | USD | 999,999,999.00 | |

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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.1.7 Card Account Adjustment Control Report

Adjustments Report is printed for the input to each intra-day cycle. From Plastic Card Technical Support/Monitoring

Report Id: 'adjustments detail'
2000

Aval Debit/Credit Card Adjustments Report

Date: 28 August

Time: 19:10

| | | Customer Number | Account/Agreement # | Val. | Amount | Account Type |
|-----------------------------|------------|-----------------|---------------------|-----------|----------------|----------------|
| No.1,2,3,4... Daily Process | | | | | | |
| Batch ID: | xxxxxxxxxx | | | | | |
| | | 9999999999 | 9999999999 | UAH | 999,999,999.00 | Debit |
| | | 9999999999 | 9999999999 | UAH | 999,999,999.00 | Credit |
| | | 9999999999 | 9999999999 | USD | 999,999,999.00 | Debit |
| | | 9999999999 | 9999999999 | UAH | 999,999,999.00 | Credit |
| | | 9999999999 | 9999999999 | USD | 999,999,999.00 | Debit |
| | | 9999999999 | 9999999999 | UAH | 999,999,999.00 | Credit |
| | | 9999999999 | 9999999999 | USD | 999,999,999.00 | Debit |
| | | 9999999999 | 9999999999 | UAH | 999,999,999.00 | Credit |
| | | 9999999999 | 9999999999 | USD | 999,999,999.00 | Debit |
| | | 9999999999 | 9999999999 | UAH | 999,999,999.00 | Credit |
| Total: | xxxxxxxxxx | | | | | |
| | | Debit(-) | | | | |
| | | UAH | 999,999,999.00 | Credit(+) | UAH | 999,999,999.00 |
| | | USD | 999,999,999.00 | | USD | 999,999,999.00 |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.2 IMMEDIATE RECOMMENDATIONS FOR ROBIN (NEW IN-HOUSE CORE BANKING SYSTEM)

It is strongly suggested that Aval Bank re-consider in-house development of the its banking systems.

Aval management should reassess the feasibility of Aval Bank acquiring a package solution for the banking systems needs and reconsider the in-house ROBIN development.

- In-house systems development is probably the highest risk a bank can make, other than fraud and improper accounting.
- Packages are supported by knowledgeable teams and user associations with other Banks users, and have full documentation, completed systems with full functionality features
- Packages have proven internal control, balancing and international accounting standards with flexibility for domestic changes,
- Packages have been proven in many countries with many accounting methods, in many banks of many different sizes, and for many years.
- Explore all possible funding options; capitalization, third party leasing, partial sub-system migration vs. total core-banking installation, etc.
- Consider that the investment in ROBIN to-date is minimal.

Invite 4 –5 Internationally well-known Banking Software vendors to give presentations on their package solutions. Include all relevant Bank Management, End-users from branches and head office, IT, Auditing. For example,

- Financial Objects, London
- Midas Kapiti International, London
- Infosys Technologies, Bangalore, India,
- Sanchez, PA, USA
- Callataÿ & Wouters, Brussels, Belgium
- Alltel, USA/France

After careful consideration, determine that Aval Bank can or cannot consider purchasing proven experienced Commercial Banking packages.

If the Bank decides that an in-house development is the only option available, then the ROBIN development effort should be expedited and enhanced. See Intermediate Term Recommendations for ROBIN Banking Software below.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.3 INTERMEDIATE TERM RECOMMENDATIONS

Plastic Cards

Since the Transmaster system is inadequate, and the Bank should not invest any more money in the system than necessary, the following is recommended.

- Expedite UPC conversion to new IFS electronic payments for front-end switch functionality and control.
- Expedite acquisition of IFS TP-CMS for enhanced management of plastic card accounts and merchants.

ROBIN Banking Software

If the Bank decides that an in-house development is the only option available, then the ROBIN development effort should be viewed as a prototype development methodology and should be expedited. The ROBIN team appears to have a good technical staff with good knowledge of the development tools and IT systems infrastructure.

The development effort and methodology should be enhanced by:

- Defining and creating a user and auditing advisory team to provide banking business feature and function input to the development team
- Enhance the development team with experienced Senior Business analysts knowledgeable in contemporary commercial banking systems
- Develop system and end user documentation (add objects to display screens or online help integrated within the ROBIN system)
- Invite internationally known Commercial Banking Solution providers to present demonstrations and marketing brochures of their respective "core banking" application systems solutions
- Complete the current ROBIN modules with the necessary functionality as mentioned in ROBIN Assessment in section 2.2.2 above
- Develop a "Change Management" process and "Release Control" methodology

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.4 LONGER TERM RECOMMENDATIONS

Reconsider the entire architecture of new systems at Aval (ROBIN or package) to provide for servicing a Customer at any outlet (branch, cash desk, ATM, POS, Phone, Internet, etc.), at any time, by including,

- Customer Relationship Management (extensive customer demographics),
- Centralized online transaction processing databases for central "book" and one End-of-Day processing ("distributed book" causes delays and reconciliation problems)
- Data identified by each Provincial Branch unit, Branch unit and Satellite unit.

Assure the availability of the proper level of accounting source data for thorough MIS queries and reporting, i.e.,

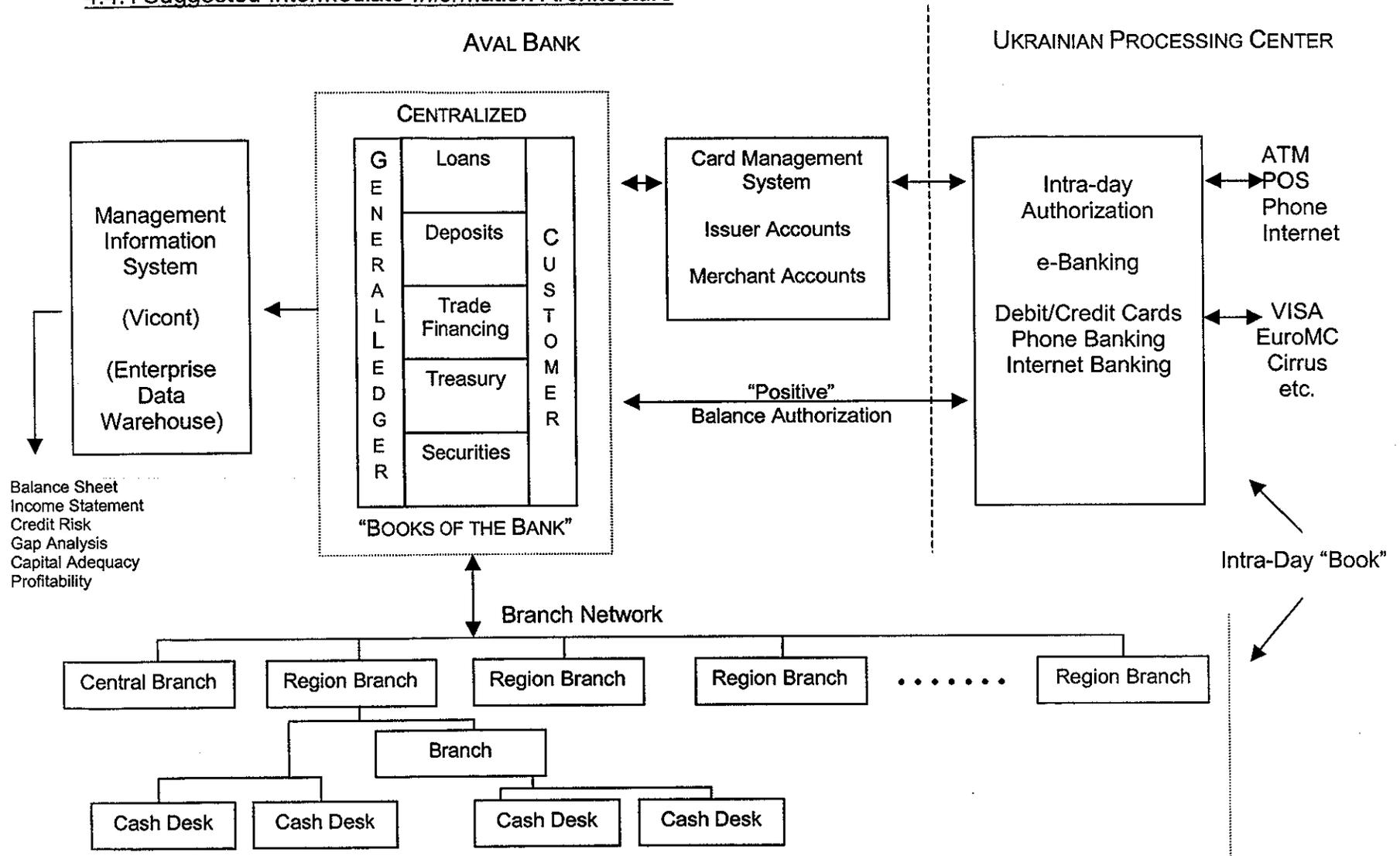
- Customer level,
- account balance and demographics, and
- certain large transaction level data.

This level of data is considered the basic set of data necessary to formulate the vast majority of answers required by Bank Management. This set of data is considered "enterprise data" for contemporary international banks and is necessary to properly.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

4.4.1 Suggested Intermediate Information Architecture



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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

5 APPENDIX

5.1 COMMERCIAL BANKING "CORE SYSTEMS" FUNCTIONAL SPECIFICATIONS

The following descriptions and discussions of banking data organization and information functionality are provided to highlight some of the major issues in today's banking. Due to the limited time scope for this advisory document, the reader should understand that there is a great deal more specificity and detail associated with all of the requirements presented.

The following considerations are presented because there are very basic and fundamental issues within each area that seriously effect the eventual effectiveness of any set of banking software solutions in supporting the business of banking. The proper data design accommodation for 'Customer' is fundamental throughout all bank reporting and servicing. The proper information delivery is dependent on three sets of specifications: technical software and hardware infrastructure, business functionality, and network performance and security.

Model Customer/Product Data Structure

This basic model of information organization (see 5.1.1 below) is presented to highlight the need to focus on the Customer and Customer Groups (individuals in same households, company subsidiaries) when designing the organization of the accounting data. The linkage of all the Customer's and Customer's Group products and services allows the bank to better serve the Customer, and recognize the total risk and profitability of doing business with the customer.

Technical Specifications

These specifications (see 5.1.2 below) highlight issues that are not directly associated with business functions but provide the IT architecture and foundation that facilitates the servicing and protection of the bank's information.

Business Solutions

The business solutions (see 5.1.3 below) are the minimum requirements to execute international standard banking business for domestic and international Customers. These solutions are basic "core banking" systems. There are many more systems required by banks today. Due to the scope of this advisory deliverable, the systems described are most closely related to Debit and Credit Card transactions.

Network Access and Service Performance

Since banking today must rely on communication systems and networks, these issues are discussed and defined as a

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

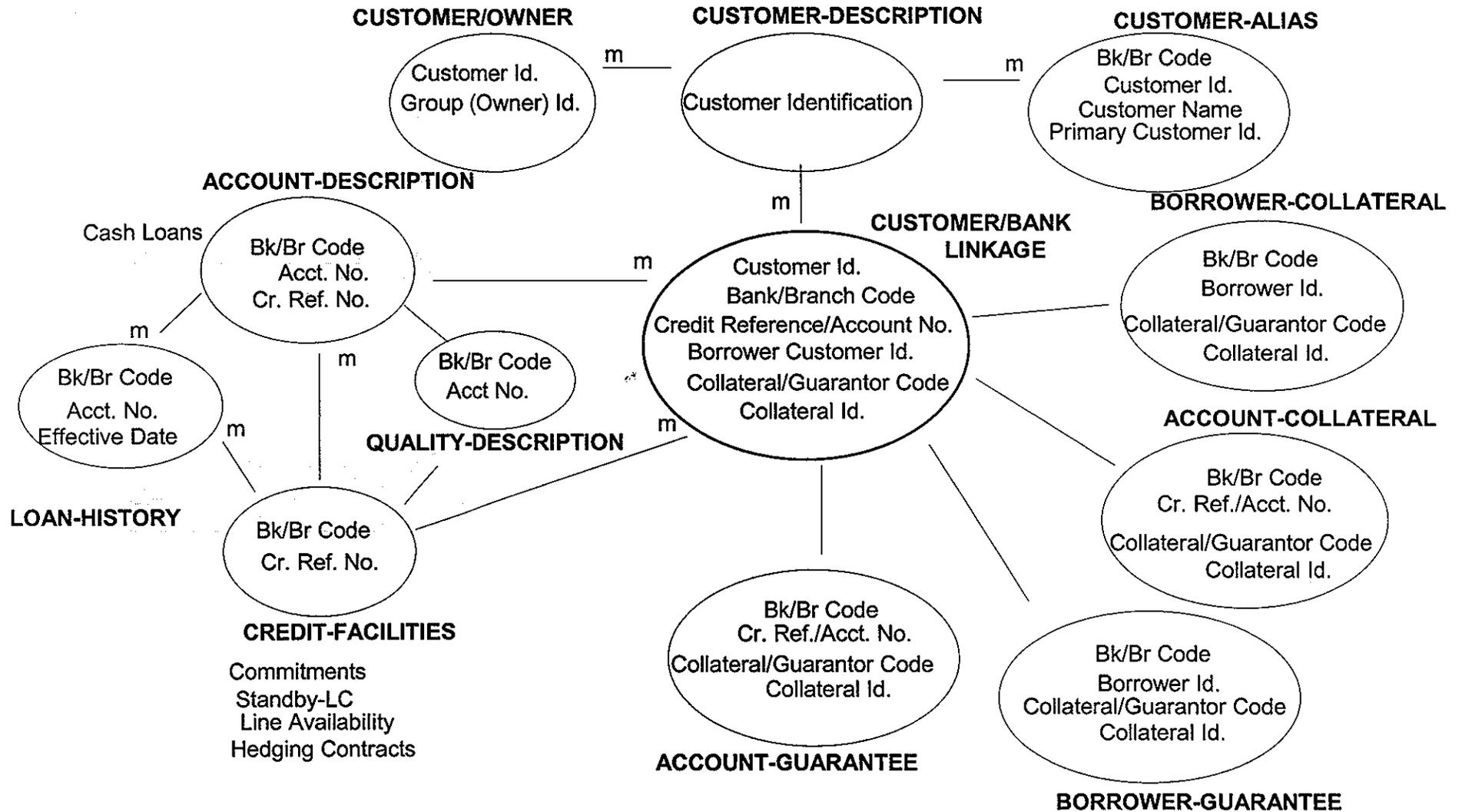
third aspect of required specifications (see 5.1.4 below). The banking "delivery" systems are no longer paper-based and nearly completely electronic. Customers are initiating and receiving results from banking transactions directly, e.g.,

- plastic cards at ATM's and for purchases of goods in stores at point of sale devices,
- on-line via the Internet and on the phone for individuals and corporations, and
- in-branch online servicing by bank officers and cash tellers.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

5.1.1 Model Customer/Product Data Structure



Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

5.1.2 Technical Specifications

The following specifications cover many, although not all, issues concerning contemporary international standard banking systems solutions. More than just the basic banking functionality within the "core" applications there are many issues concerned with the structure of the data processing and data storage (e.g., centralized vs. branch "book"), the consistence of data manipulation (e.g., interest calculations), and business continuity (e.g., contingent back-ups, fail-over capability, etc.).

These specifications are presented more as a "checklist" for Bank's End-users and IT management to compare to any in-house development that may be pursued or banking software vendor packages that may be evaluated and considered in the future.

5.1.2.1 IT Architecture Requirements

These Technical Specifications describe the requirements for various banking computer systems and related interfaces, which are, in one form or another, installed and used in modern international commercial banks to support and process all banking transactions and payments instructions. These banking system solutions are generally referred to as a Commercial Banking System and are comprised of the following basic components;

- a. "core banking" transaction systems (Customer, Deposits, Loans, General Ledger/Financial Control),
- b. banking Customer delivery systems for Branch Automation,
- c. inter-bank electronic item processing interfaces (national and international payment systems, credit/debit cards, etc.) and
- d. information facilitating systems (data warehouse).

5.1.2.1.1 Design Standards

The solution platform and architecture should to be compliant with contemporary international standards. Basic concepts such as:

- a. system inter-operability and solution integration - . the systems solutions (customer, loans, deposits, general ledger, branch and other delivery, and data warehouse), process and operate together in a compatible manner with, at least, a logical "seamless" appearance for all accounting, end-users and, most importantly, for Customers. The combined total proposed Commercial Banking System solution should be designed for "end-to-end" handling of all modern internationally processed banking transactions and information delivery.

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations.

- b. open systems architecture
- c. client server architecture
- d. component and device independence, including modularity and flexibility of software components for ease of future development and release control
- e. "scalability", i.e., upwardly compatible components regarding capacity and volumes,
- f. data and account integrity and security
- g. system availability should be 99.9+ percent of the time with no noticeable delay to an End-user or Customer due to any automatic fail-over.
- h. processing redundancy to support a "24 by 7" operation in the central processing center, including, but not limited to:
 - i automatic fail-over with no noticeable delay to the end-user giving audible warning and auto-dial support call
 - ii automatic fail-back with manual initiation with no noticeable delay to the end-user
 - iii automatic synchronization of primary and secondary data bases
 - iv fault-tolerant servers
 - v parallel and redundant processors
 - vi adherence to "hot-plug" standards
- i. data management based on a widely installed and industry accepted relational data base management system (RDBMS) engine. All solution systems should follow contemporary data entity relational techniques and methodologies. All solution systems should demonstrate a collective integration of effective data normalization, data sharing and minimal data redundancy
- j. other file and message protocols consistent with Electronic Data Interchange (EDI) and network standards
- k. an end-user interface layer designed:
 - i to facilitate accuracy and completeness at time of data capture
 - ii with both GUI (graphical user interface) and character presentations options
 - iii to offer display navigation assistance to end-users, especially account officers and tellers during Customer-Bank points of contact
 - iv to provide end-user response between 1-5 seconds at branch teller, branch platform, automatic teller machines and departmental workstations
- l. single point of entry for commonly used data, e.g., customer name entered only once, loans and deposits use the same data, and
- m. compatibility and facilitation for internationally accepted standards, e.g., but not limited to:
 - i International Organization for Standardization (ISO)
 - ii International Federation for Information and Documentation (FID)
 - iii World Intellectual Property Organization (WIPO)

Bank Customer Deposit and Plastic Card Payments Systems

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5.1.2.1.2 Centralized Processing

The basic IT environment and information processing should be designed using the commonly used Banking concepts of daily central processing of the entire Bank's accounting record at one time, commonly known as the "End-of-Day" (EOD) process.

- a. The "Books of the Bank" should be officially and legally located at the Head Office processing center.
- b. The databases for every Customer, account and transaction should be stored and updated at the processing center. The Customer transactions will be initiated at the branches and sent to the central systems for updating.
 - i. The entire Bank should be on-line for domestic branch operation throughout an extended business day, e.g., 8.00am to 18.00pm.
 - ii. The connectivity should be real-time and interactive throughout the business day.
 - iii. The Branch Automation local system should be able to temporarily process local Customers and accounts if the communication service is interrupted. The local Branch Automation system and the central system should be capable of automatically updating and synchronizing the databases when the communication service is restored.
- c. The End-of-Day processing will wait for all domestic Branches to "close" and pass their transactions to the Information Processing Center. The EOD processing is expected to start at approximately 20.00pm and be completed within 2 – 4 hours, i.e., before 24.00 (midnight) of each day.
- d. The updated or changed records and accounts of the Customers will be sent back to the Branches for local replacement, or "refresh" for the start of the next day. No official posting will be executed in the Branches.
- e. The processing center systems will send report database tables or files to the Branch system for local printing on hardcopy or other display form. The central processing center will NOT print or create daily or regularly scheduled "hardcopy" reports and ship or mail them out to the Branches or other offices.

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5.1.2.1.3 IT Architecture Benefits

The centralized design of the information process, serviced by multiple delivery systems is acknowledged via long-term international experience as providing the following benefits.

- a. All summary and detail financial information from every Branch (consolidated, including branch satellite units) known on-line the next morning
- b. Consolidated Bank financial position available the next morning
- c. Customer view for all accounts (savings, current, time, loans, individual, joint, etc.) available to all authorized workstations
- d. Risk Management and exposure reporting available
- e. Customer profit and loss statements available
- f. Customer statements (consolidated) available for Customer to verify status of all accounts
- g. Customer *trust* significantly improved
- h. "anywhere, anytime, anyway" banking economically possible

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5.1.3 Business Solution Requirements

The technical specifications described below are the business functional requirements for international standard Commercial Banking System solution.

5.1.3.1 Overall Requirements - All Solutions

The following are requirements that apply to all solutions, systems, sub-systems, modules, computer software, hardware and network components that are mentioned or may be implied within these Technical Specifications for a Commercial Banking System.

| # | Required Features/Functions/Data Groups |
|---|---|
| 1 | <u>Multi-currency</u> Every solution must be able to handle unlimited currencies for recording account balances and for transaction amounts. The number of different currencies must be parameter driven. The method for maintaining the exchange rates must be efficient and occur in one commonly shared component for all the solutions. |
| 2 | <u>Multi-language</u> Every solution must have at least three (3) language options for workstation screen displays, help screens, hard-copy output, and documentation. The language options must be parameter driven. One language must be Ukrainian. |
| 3 | <u>Integrated Calendar</u> The Bank requires that the systems solutions (customer, loans, deposits, general ledger, treasury, branch and other delivery, and data warehouse), process and operate from the same bank company calendar. The calendar module must be able to define banking business days, non-banking days, processing days, holidays, emergency closure days, etc., for consistent calculations and solutions daily cycles. The calendar must be retained historically and be able to be created and updated at least one year in advance with effective dates for usage. Different calendars must be available for different bank companies that may exist in different countries and time zones. The calendar processing across all applications is required to highlight and indicate to the officer when entering a loan or time dependent instrument when major due dates (e.g., maturity date) will be non-business days. |

Bank Customer Deposit and Plastic Card Payments Systems

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| # | Required Features/Functions/Data Groups |
|---|---|
| 4 | <p>Integrated Interest Rates</p> <p>The Bank requires that the systems solutions (customer, loans, deposits, general ledger, treasury, branch and other delivery, and data warehouse), process and operate from the same bank interest rate table. The interest rate module must be a common sub-system that is accessed as needed by all systems for consistent interest calculations. The interest rate table must be easily updated from external market data services, component medium (e.g., diskette) or authorized user entry. The rate table must be retained historically and be able to be created and updated in advance with effective dates for usage.</p> <p>The interest calculation formula is parametric in design to allow the following day basis standards:</p> <ul style="list-style-type: none"> ▪ Actual days / 360 day year ▪ Actual days / 365 day year ▪ Actual days / 366 day year ▪ 30 day month / 360 day year ▪ 30 day month / 365 day year ▪ 30 day month / 366 day year <p>Rate fields are consistently defined by parameters, e.g., 3 significant whole numbers and 6 significant decimal positions (including all interim work data fields) to guarantee accurate rounding to 4 decimal positions. Rounding options must include rounding to the units position for currencies with no decimal positions.</p> <p>Interest calculations for accruing, capitalizing and paying must be available for at least the following frequencies:</p> <ul style="list-style-type: none"> ▪ Daily ▪ Monthly ▪ Quarterly ▪ Semi-annually ▪ Annually <p><i>See further details regarding interest specifications under the accounting applications. The integrated interest component must include all features and functions itemized in each of the accounting applications and the features and functions must be consistently applied in all applications.</i></p> |
| 5 | <p>Effective and Value Dated Transactions</p> <p>All solution systems must provide for effective dating and value dating (back-value and future-value) for booking of all transactions, e.g., account opening, deposits, withdrawals, disbursements, payments, account closing, fees, interest, adjustments, ledger/sub-ledger accounting entries, etc.</p> |
| 6 | <p>Accounting and Management Reporting</p> <p>All solution systems must present their respective standard set of daily, monthly and periodic accounting reports and displays. The Bank's users will evaluate the control reporting by each accounting solution and as a whole for the core banking solutions, i.e., customer, loans, deposits, general ledger and treasury.</p> <p>The branch reporting should be included in the core solutions plus local reporting.</p> <p>The data warehouse reporting should be presented as a model demonstrating the full range of proposed reporting capabilities.</p> |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|----|--|
| 7 | <p><u>Shared Processing Option</u> The total solution integration should include the option to direct common time consuming logistical activities to regional processing offices or to a central processing office. For example,</p> <ul style="list-style-type: none"> ▪ Certain hard copy print and mail services <ul style="list-style-type: none"> - Statements - Notices - Advices - Billing, etc. ▪ Standardized Bank procedures <ul style="list-style-type: none"> - Consumer loan application scoring and processing - Project appraisal, etc. |
| 8 | <p><u>Arithmetic intermediate data fields</u> All calculations must use work fields with sufficient significant digits on both sides of the decimal to ensure accurate results according to the accounting standards for the Bank, the National Bank, country accounting standards and international accounting standards.</p> |
| 9 | <p><u>Monetary data field size</u> Monetary data elements in all solutions must be proven large enough for currencies requiring large numerical values, e.g., 18 numeric digits for significant whole numbers with 2 significant decimal digits.</p> |
| 10 | <p><u>Record identifier major key data field</u> All record identifiers (for example, but not limited to, customer identifier, account numbers, certificate identifiers, ledger and sub-ledger line items, MIS data record identifier, POS card identifier, etc.) in all required application solutions and interfaces must accommodate existing and future record identifier characteristics, for example, but not limited to, minimum/maximum size, minimum/maximum value range, format, valid character set, etc. The vendor must respond with each identifiers characteristics and limitations, if any, for all solutions required in this Technical Specification.</p> |
| 11 | <p><u>Internal System Activity Audit</u> For all applications, all activity, either financial transactions or updates to descriptive data must include a internal control group of data, e.g., but not limited to,</p> <ul style="list-style-type: none"> ▪ Source of activity (system or operator) ▪ Date of last financial activity ▪ Date last non-financial activity |
| 12 | <p><u>Universal Adjustments and Data Changes</u> For all applications in the overall system, all financial data fields must allow adjustments and all indicative (descriptive) data fields must allow updates. This universal data field access must be tightly controlled via security profiles.</p> |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|----|--|
| 13 | <p><u>User Access Security Profiles</u></p> <p>The complete integrated Commercial Banking System and each of the individual accounting applications must be secured by user access profiles. The profiles should limit access by, but not limited to:</p> <ul style="list-style-type: none"><li>▪ User sign-on and password<li>▪ User function(s)<li>▪ Workstation<li>▪ Major data group(s)<li>▪ Day and time |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

5.1.3.2 Customer Information

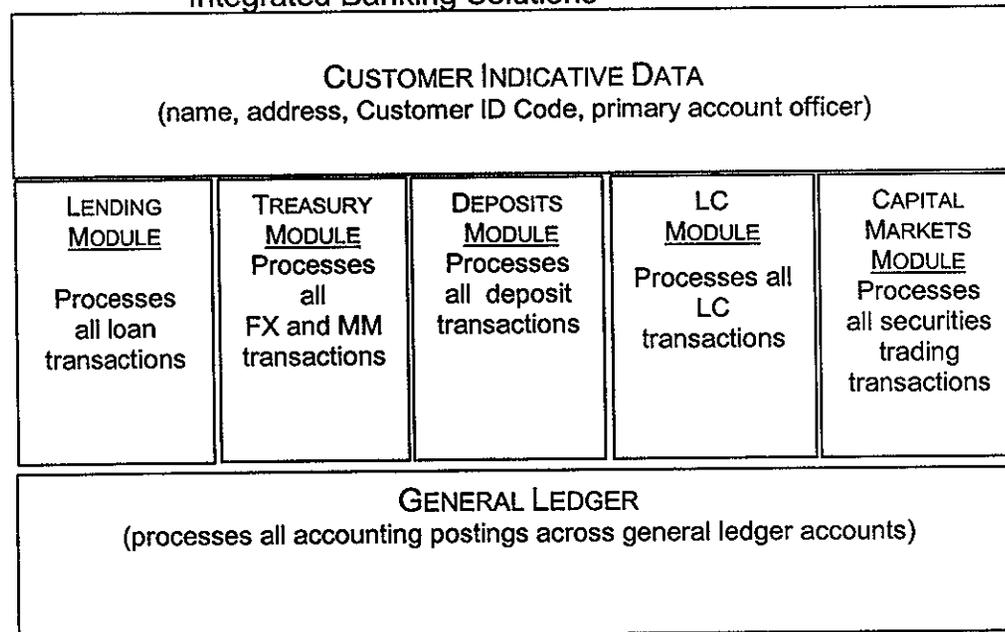
5.1.3.2.1 General Requirements

The Customer solution is the pivotal system for linking and joining any one Customer, or group of related Customers, and their respective products and services provided by the Bank, into a consolidated view. Some of the benefits are,

- improved service for the Customer,
- bank marketing,
- reduced data redundancy, and
- bank risk management.

The Customer system is not an accounting system; it is a Customer descriptive and products and services linkage system.

Integrated Banking Solutions



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5.1.3.2.2 Features/Functions/Data Groups

The target Customer Information solution requires, but is not limited to, the following chart of features, functions and major data groups.

| # | Required Features/Functions/Data Groups |
|---|---|
| 1 | <p><u>Customer Identification</u> The Customer ID must be unique across entire bank and across bank holding company and independent of all other numbers, ID's and identification purposes. Identification number must have the capacity to never be re-assigned within the legal document retention period of Ukraine</p> |
| 2 | <p><u>Customer Definition</u> The system must provide this function with at least the following information and supporting processes. Accommodation for any Customer-Bank product or service relationship, e.g.,</p> <ul style="list-style-type: none"> a) Borrower, b) Depositor, c) Guarantor, d) Collateral owner, e) Participating lender, f) Correspondent bank, g) Trade finance partner, h) any user of bank service |
| 3 | <p><u>Customer Linkage</u> The system must provide this function with at least the following information and supporting processes. Inter-Customer linkage for grouping related customers, e.g.,</p> <ul style="list-style-type: none"> a) corporate subsidiaries, b) family households, etc. |
| 4 | <p><u>Customer History</u> The system must provide this function with at least the following information and supporting processes. Historical recording of previous Customer indicative and account linkage data</p> |
| 5 | <p><u>Customer Data</u> The system must provide this function with at least the following information and supporting processes. Data elements for all legal entities, e.g., individuals, partnerships, corporations, institutions and public agencies</p> |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|---|---|
| 6 | <p>Customer Name The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Legal First name b) Legal Middle name c) Legal Family name d) Aliases <i>multiple unlimited aliases, i.e., "1 - n" aliases</i> e) Name Prefix (Mr. Mrs. Eng. Dr., Miss, Ms., etc) f) Name Suffix (PhD, MBA, IR, Jr., Sr., etc.) g) Short name (unique) h) Corporate Legal name |
| 7 | <p>Customer Addresses The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Building number b) Street name 1 c) Street name 2 d) Building name e) District name f) City/Town g) Province/State h) Country i) Post code <p><i>Multiple unlimited addresses as a data group, i.e., "1 - n addresses" accessed for statements, notices, marketing mailings, etc.</i></p> |
| 8 | <p>Customer Contact The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Home telephone number1 b) Home telephone number2 c) Mobile phone d) Office Number1 e) Office number2 f) Fax Number g) Internet electronic mail address <p><i>All numbers must accommodate country code/area code/exchange/number)</i></p> |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 9 | <p><u>Customer/Bank Contact</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Relationship Managerb) Customer Branch/Business Unitc) Originating Date |
| 10 | <p><u>Customer National ID</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Legal Entity code (e.g., individual, partnership, corporations, public agency, institution, association, etc.)b) Government IDc) Residency IDd) Passport Number/Countrye) Tax IDf) Driver's Licenseg) Corporate License numberh) Corporate License datei) Geographic codej) Standard Industry Code (SIC)k) Economic Sectorl) Government Ministry Code |



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| # | Required Features/Functions/Data Groups |
|----|---|
| 11 | <p><u>Customer Personal</u></p> <p>The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Household status (e.g., head of household) b) Date of birth c) Citizenship d) Educational level e) Gender f) Ethnic group g) Marital Status h) Spouse name i) Number of children j) Employer name k) Job Title/Responsibility l) Office Address m) Employment date n) Salary/Income o) Net worth p) Residency ownership (own/lease home/apartment) q) Residency date r) National Credit Information ID |
| 12 | <p><u>Customer Corporate</u></p> <p>The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Income Statement data b) Balance Sheet data c) Quarterly & Annual report data d) Assets/Liabilities/Capitalization/Equity e) Financial ratios f) Principle and Signature names g) Number of employees h) National credit agency rating/date i) Standard & Poor credit rating/date j) Moody's credit rating/date <p><i>Corporate financial data will be more extensive in data warehouse</i></p> |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 13 | <p><u>Customer Group Linkage</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Family members (spouse, sons, daughters, parents, others living in same house) b) Holding company to subsidiary c) Individual/individual d) Partnerships e) Government agencies |
| 14 | <p><u>Customer Products/Services Linkage</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Customer ID b) Bank code c) Product/Service Branch/Business Unit d) Product/Service number e) Product/Service type <p><i>Multiple entries required for all products/services (current, savings, loans, consolidated statements, certificates, debit/ATM card, credit card, Internet/PC, securities, trust, etc.)</i></p> |
| 15 | <p><u>Previous Customer Profiles</u> *</p> <p>The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Number of retained historical Customer profiles must be parameter driven and determined by the Bank |
| 16 | <p><u>Rules based processing</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Data entry quality validation, verification, standard data content and abbreviations (Mr., Ms., Dr., MBA, St., No., etc.) b) Suggested household linkages c) Suggested business relationship linkages d) Multi-language statements e) Data Quality post entry screening <ul style="list-style-type: none"> ▪ Data redundant elimination ▪ Missing data exceptions ▪ Non-standard phrases f) Customer profiling g) Predictive modeling <p><i>These and other rules based processing may also be done within the data warehouse solution</i></p> |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|----|--|
| 17 | <p><u>Customer Standard Reporting</u></p> <p>The system must provide this function with at least the following information and supporting processes.</p> <p>A full list of all operational and exception reporting included in the proposed solution must be submitted with the following report descriptions,</p> <ul style="list-style-type: none"><li>▪ Report title<li>▪ Brief report purpose and focus description<li>▪ Frequency<li>▪ Major sort sequence<li>▪ Major sub-totals and grand totals<li>▪ Media |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

5.1.3.3 Deposit Accounting

5.1.3.3.1 General Requirements

The deposit accounting solution must account for deposits for corporate wholesale, middle market companies, high net worth individuals and retail Customers.

Deposit accounts are an important source of funds for banks. Deposits represent the core element in maintaining liquidity to meet funding requirements for lending, investing, trading, and customer demands for withdrawals. These accounts are an integral part of the Bank's funds management strategy.

The deposit system solution, should allow for the taking and accounting for cash and negotiable fund instrument deposit transactions under both International Accounting Standards and the requirements of the National Bank of Ukraine. The Customer statements and other notices of the Deposit Accounting system should convey to the Customer a sense of complete security and concern for the safety and integrity of the funds of the Customer.

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5.1.3.3.2 Features/Functions/Data Groups

The target Deposit Accounting solution requires, but is not limited to, the following chart of features, functions and major data groups.

| # | Required Features/Functions/Data Groups |
|---|---|
| 1 | The deposit accounting solution must process all commonly known bank liability accounts, e.g., but not limited to: a) Current, interest bearing b) Current, non-interest bearing c) Savings demand d) Savings term (time deposits) e) Savings certificates f) Checking g) Money market h) Nostro and vostro i) Official bank j) Offshore/overnight k) Interest and non-interest bearing l) Overdraft and non-overdraft m) Passbook |

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| # | Required Features/Functions/Data Groups |
|---|---|
| 2 | <p><u>Account Control</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Stop Payments instructionsb) Block transactions instructions; partial and totalc) Hold amounts; partial and totald) Activity status<ul style="list-style-type: none">▪ Active▪ Inactive▪ Closed▪ Dormante) Escheat criteria and processf) Collateral indicatorsg) Balance limits<ul style="list-style-type: none">▪ Minimum positive▪ Maximum overdrafth) Activity limits<ul style="list-style-type: none">▪ Withdrawals, # of, and amounts (e.g., ATM)▪ Transfer limits, # of, and target accounts▪ Domestic vs. international payments▪ Total # transactions |

Bank Customer Deposit and Plastic Card Payments Systems

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| # | Required Features/Functions/Data Groups |
|---|--|
| 3 | <p><u>Deposit Account</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Bank b) Branch/Business Unit c) Account Number d) Description e) Purpose f) Deposit type/categorization g) Relationship officer h) Geographic i) Standard Industry Code (SIC) j) Open date k) Effective date l) Status (active, block, etc.) m) Standing instructions (automatic transfers, etc.) n) Statement type o) Currency p) Ledger balance(settled and unsettled funds) q) Available balance r) Uncollected balance s) Multiple availability, minimum 6 cycles (float) t) Overdraft limit u) Overdraft approval & date v) First deposit date w) Actual interest rate x) Base rate identifier y) Rate variable or fixed z) Rate spread from base rate aa) Interest calculation method/basis bb) Interest accrued/paid/capitalized |

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| # | Required Features/Functions/Data Groups |
|---|--|
| 4 | <p><u>Standing instructions</u> For pre-defined automatic funds transfers or payments. The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Bank b) Branch/Business Unit c) Source account number d) Target bank/account number (requires table of beneficiary banks & addresses) e) Description f) Purpose g) Priority h) Sequence i) Currency code j) Start date k) End date l) Frequency m) Amount n) Balance threshold |
| 5 | <p><u>Statements</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Account linkage b) Customer and address linkage c) Single account / consolidated accounts d) Current period statement e) Previous cycles statements (number cycles user defined) f) Opening balances g) Closing balances h) Statistics (interest rate, date open, interest accrued) <p><u>Transaction Activity:</u></p> <ul style="list-style-type: none"> a) Date b) Description c) Currency d) Amount e) Value date f) Process date g) Delivery source (ATM/branch/Internet/etc.) |

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| # | Required Features/Functions/Data Groups |
|---|--|
| 6 | <p>Balance The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Actual, net credits/debits b) Available c) Uncollected d) Multiple availability, minimum 6 cycles e) Overdraft f) Nostro g) Vostro h) Minimum threshold |
| 7 | <p>Funds Management The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Purpose identifier for standing payment order b) Pre-defined transfers c) Multiple instructions and accounts d) Instruction prioritization e) Instruction criteria f) Maximum threshold balance g) Minimum threshold balance h) Excess funds transfer i) Replenishment transfer j) Consolidation k) Disbursement l) Transfer instruction timing and frequency <ul style="list-style-type: none"> ▪ Start/end date ▪ Periodic ▪ One time |
| 8 | <p>Overnight/Offshore The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Combined function of funds management pre-defined standing instructions based on excess funds and high/premium interest bearing account. b) High interest account representing specialized investment opportunity for high value transactions of excess funds transferred to offshore accounts with higher interest, or banking sector re-purchase agreements between banks and the National Bank. |

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| # | Required Features/Functions/Data Groups |
|---|--|
| 9 | <p>Interest The system must provide this function with at least the following information and supporting processes. Tiered balance pricing, number tiers and criteria defined by the user</p> <p><u>Accrual:</u></p> <ul style="list-style-type: none">a) Daily,b) Weekly,c) Monthly,d) Quarterly,e) Semi-annuallyf) Annually <p><u>Compounding:</u></p> <ul style="list-style-type: none">a) Daily,b) Weekly,c) Monthly,d) Quarterly,e) Semi-annually,f) Annually <p><u>Capitalization:</u></p> <ul style="list-style-type: none">a) Daily,b) Weekly,c) Monthly,d) Quarterly,e) Semi-annually,f) Annuallyg) Same accounth) Different account <p><u>Rates:</u></p> <ul style="list-style-type: none">a) Fixedb) Variablec) Base, internal/marketd) Spread (+/-) <p><u>Basis:</u></p> <ul style="list-style-type: none">a) 365/366b) 366/360c) 360/360 <p><i>See Overall Requirements.</i></p> |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 10 | <p><u>Overdraft</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Thresholds and limits, b) # of occurrences, c) revert negative liability amount to asset ledger, d) allow for pre-approved, e) approval each occurrence f) fees and interest options |
| 11 | <p><u>Statements</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> ▪ Available for any account, <p><u>Periodic cycles:</u></p> <ul style="list-style-type: none"> a) Monthly on cycle date, b) Monthly EOM, c) Quarterly, d) Semi-annually, e) Annually, f) On request, g) Date to/from range h) Multi-language option |
| 12 | <p><u>Notices, e.g., but not limited to,</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Payments, incoming/outgoing, b) Overdraft, c) Inactivity, escheat d) Audit confirmations e) Special free-form correspondence |

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| # | Required Features/Functions/Data Groups |
|----|---|
| 13 | <p><u>Fees</u>, unlimited, user defined, e.g., but not limited to, The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Periodic service (monthly)b) Transactions:c) Depositsd) Withdrawals,e) Transfers,f) Paymentsg) ATM usageh) Overdrafti) Returned draftj) Insufficient funds, etc.k) <u>Balances</u>:<ul style="list-style-type: none">▪ Actual▪ Collected▪ Average▪ Minimum low balance |
| 14 | <p><u>Deposit Accounting Standard Reporting</u> The system must provide this function with at least the following information and supporting processes. A full list of all operational and exception reporting included in the proposed solution must be submitted with the following report descriptions,</p> <ul style="list-style-type: none">▪ Report title▪ Brief report purpose and focus description▪ Frequency▪ Major sort sequence▪ Major sub-totals and grand totals▪ Media |

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5.1.3.4 Loan Accounting

5.1.3.4.1 General Requirements

All loans in modern international banks, commercial for companies and institutions, or retail for individuals, are each becoming more unique as banks attempt to differentiate their products.

Most processing elements are common to all loans. By permitting flexible processing options within the defined elements, each loan can be customized to unique legal requirements and terms and conditions, but with a standard processing flow. Newer loan systems using open system architecture isolate common elements of loans and establish loan parameters within the elements so that the process becomes more standard.

Due to the flexibility in lending products demanded by the market and bank business development officers, all loan accounting can be and, in some cases is, processed on one system. One full function loan accounting system solution offers better accounting integration and processing efficiencies.

The loan accounting system should have both commercial and consumer loan components to enable the lender to develop a unified database.

The commercial loan component of the loan system should contain extensive documentation capabilities of the terms and conditions of the loan. The documentation capability must include,

- check off procedures for required documentation;
- data base links or separate modules for project appraisal documents and processes,
- data base links to additional engineering documents, or
- data base links to other legal documents.

This provides online documentation tracking for construction loans and other infrastructure project loans with extensive documentation requirements.

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5.1.3.4.2 Features/Functions/Data Groups

The target Loan Accounting solution requires, but is not limited to, the following chart of features, functions and major data groups.

| # | Required Features/Functions/Data Groups |
|---|---|
| 1 | Capable of processing all wholesale, middle market and retail loans and credit facilities/commitments. |
| 2 | The loan accounting solution must include all on and off balance sheet credit instruments, e.g., but not limited to, <ul style="list-style-type: none">▪ secured and unsecured lending,▪ installment,▪ revolving credit,▪ demand,▪ leases,▪ discounts,▪ trade finance/letters of credit,▪ contingent letter of credit,▪ line of credit,▪ credit commitment,▪ bank guarantee▪ convertible facilities,▪ syndicated lending,▪ participating lending,▪ real estate,▪ construction,▪ project,▪ mortgages,▪ re-structured credits, etc. |
| 3 | The system must provide this function with links to project appraisal, assessment and progress documentation records for phased disbursement. |

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| # | Required Features/Functions/Data Groups |
|---|--|
| 4 | <p><u>Loan account</u></p> <p>The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Bank b) Branch/Business Unit c) Account Number d) Description e) Purpose f) Loan type/categorization g) Loan status (e.g., current, sub-standard, etc.) h) Relationship officer i) Geographic code j) Standard Industry code (SIC) k) Loan risk rating l) Currency code m) Secured (linkage to collateral/guarantor) n) Originating date o) Effective date p) Original Commitment q) Outstanding loan balance r) Outstanding interest due s) Outstanding fees t) Disbursement schedule (dates and amounts) u) Billing schedule v) First payment due date w) Payment type (interest/principle/both) x) Payment schedule/amortization y) Payment due date z) Payment frequent aa) Maturity date bb) Actual interest rate cc) Base rate identifier dd) Rate variable or fixed ee) Rate spread from base rate ff) Interest calculation method gg) Interest accrued/paid/capitalized |

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| # | Required Features/Functions/Data Groups |
|---|--|
| 5 | <p><u>Credit facility (off balance sheet contingent liabilities)</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Bankb) Branch/Business Unitc) Facility Number (linkage to loans/draw downs)d) Descriptione) Purposef) Facility type/categorizationg) Geographic codeh) Standard Industry Code (SIC)i) Credit ratingj) Currency codek) Originating datel) Effective datem) Expiry datan) Commitment feeo) Original Commitment amountp) Used amountq) Available amount |
| 6 | <p><u>Loan account history</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Record of all descriptive and loan term changes for the life of the loanb) Record of all disbursements and payments |

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| # | Required Features/Functions/Data Groups |
|---|---|
| 7 | <p><u>Collateral/guarantee</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Owner of Collateral/Guarantee b) Customer linkage c) Loan linkage d) Description e) Purpose f) Collateral type/categorization g) Location (full address) h) Effective Date i) Expiration Date j) Original booked value k) Amount of undertaking l) Percentage undertaking m) Market value n) Date last marked to market o) Type of support p) Continual loan to collateral value ratio q) Safekeeping location r) CUSIP number |
| 8 | <p><u>Syndicated and Participating credits</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Lead bank b) Member banks c) Original underwriting d) Subscribed amounts and institutions e) Un-subscribed amount f) Consortium/Customer/loan linkage |
| 9 | <p><u>Loan documentation</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Required document checklist for this loan b) Application data c) Customer financial disclosure data d) Licenses/approvals/certifications |

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| # | Required Features/Functions/Data Groups |
|----|---|
| 10 | <p><u>Loan project</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Customer/Loan/project linkage b) Project description c) Engineering feasibility assessment d) Financial pro-forma assessment e) Progress Milestones (dates, descriptions, disbursement criteria) |
| 11 | <p><u>Interest rates</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Effective date b) Interest rate (3 digits/6decimals) c) Rate Description d) Rate history e) Date entered f) Last date updated <p><i>Maintain historical interest rate changes. See Overall Requirements.</i></p> |
| 12 | <p><u>Fees</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Commitment b) Origination c) Processing d) Legal e) Late f) Prepayment g) Buy down h) Engineering/architectural i) Insurance premium/fee j) miscellaneous |

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| # | Required Features/Functions/Data Groups |
|----|---|
| 13 | <p><u>Loan classifications</u> The system must provide this function with at least the following information and supporting processes. Parameter driven and defined by the user, e.g., but not limited to:</p> <ul style="list-style-type: none"> a) Current b) Special mention c) Substandard d) Doubtful e) Loss f) Non-accrual |
| 14 | <p><u>Collateral classification</u> The system must provide this function with at least the following information and supporting processes. Parameter driven and defined by the user Unlimited classifications</p> |
| 15 | <p><u>Billing options</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Coupon book b) Preauthorized and standing orders c) Issue payment notice at due date d) Bill one or all payment components (principal/interest/fees/escrow) e) Seasonal billing options (e.g., skip principle payments for 3 months) f) Balloon (once at expiry) g) Periodic Billing h) Monthly i) Semi monthly j) Quarterly k) Semi-annual l) Annual m) Expiration |

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| # | Required Features/Functions/Data Groups |
|----|---|
| 16 | <p><u>Interest rate formulas</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) 360/360 basis b) 365/360 basis c) Actual days d) Itemized available interest formulas (e.g., rule of 78, etc.) e) Discount f) Simple interest on outstanding balance <p><i>See Overall Requirements.</i></p> |
| 17 | <p><u>Interest accrual/capitalization/payment frequency</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Daily b) Monthly cycle c) Quarterly d) Semi-annually e) Annually f) Transaction g) Expiration <p><i>See Overall Requirements.</i></p> |
| 18 | <p><u>Mortgage escrow analysis</u> (annually) Due to the variable nature of this functionality the vendor must offer their existing solution for this function.</p> |
| 19 | <p><u>Loan payment schedule</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Any amount b) Any dates c) Unlimited number of entries |
| 20 | <p><u>Grace period</u> The system must provide this function with at least the following information and supporting processes.</p> <p>Payment due <u>X</u> days after billing First payment due <u>X</u> days after disbursement</p> |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 21 | <p><u>Payment application sequence rules</u> The system must provide this function with at least the following information and supporting processes. Parameter driven function to define the sequence for applying a loan payment to outstanding amounts.</p> <ul style="list-style-type: none">a) Principleb) Interestc) Past due interestd) Past due principlee) Feesf) Excess payment amount (principle, interest, fees, escrow, etc.) |
| 22 | <p><u>Payment/Interest/Fee Overrides</u> The system must provide this function with at least the following information and supporting processes. Security access overrides should allow, but not limited to:</p> <ul style="list-style-type: none">a) Waive interestb) Waive feesc) Suspend principle/interest payments for x periodsd) Extension of loan |
| 23 | <p><u>Multiple disbursement methods</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Time dependentb) Milestone dependentc) Line of creditd) Step down |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 24 | <p><u>Loan documentation</u> The system must provide this function with at least the following information and supporting processes. Monitoring and exception process and reporting, e.g., Project/Real Estate/Construction Documentation</p> <ol style="list-style-type: none"> a) Application b) Financial disclosure borrower/guarantor c) Corporate documents d) Corporate financial statement e) Corporate resolution f) Current tax return g) Credit agency information h) Executed guaranty i) Indemnity agreement j) Loan agreement k) Insurance correspondence l) Appraisal of property/project m) Engineering feasibility assessment n) Legal documents o) Closing statement p) Attorney's letter q) Title company r) Annual performance review by appraisers |
| 25 | <p><u>Project/construction progress documentation</u> The system must provide this function with at least the following information and supporting processes. Provide for comments or linkage to sub-system to document funds disbursement.</p> |
| 26 | <p><u>Credit facility accounting</u> The system must provide this function with at least the following information and supporting processes.</p> <ol style="list-style-type: none"> a) Original commitment b) Draw downs (loans) c) Used amount d) Available amount |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 27 | <p><u>Collateral mark to market</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Re-value in a blanket valuation of defined securities b) Re-value individual securities c) Calculate loan to collateral value ratio d) Collateral currency e) Loan currency |
| 28 | <p><u>Guarantor Reporting</u> The system must provide this function with at least the following information and supporting processes. Management of guarantor positions requires, but is not limited to:</p> <ul style="list-style-type: none"> a) Borrower description b) Guarantor description c) Project or purpose description d) Loan terms and conditions e) Amount or percentage of loan guaranteed f) Start date and expiry date g) Location h) Branch and Account Officer |
| 29 | <p><u>Workout and recovery loan accounting</u> The system must provide this function with at least the following information and supporting processes. Accommodate booking of assets defined by the user for loans in workout or recovery.</p> |
| 30 | <p><u>Loan quality assessment and classifications</u> The system must provide this function with at least the following information and supporting processes. Periodic risk asset portfolio analysis Quality criteria parameter driven and defined by the user</p> |

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| # | Required Features/Functions/Data Groups |
|----|---|
| 31 | <p><u>Management reporting</u> The system must provide this function with at least the following information and supporting processes. Concentrations of Credit</p> <ul style="list-style-type: none"> a) Risk by customer b) Risk by account officer c) Risk by type of account d) Risk by account terms and conditions e) Risk by guarantor f) Risk by currency g) Risk by country h) Risk by economic sector i) Funding Gap Analysis j) Cost / Revenue ratio k) Credit service ratios l) Customer Profitability m) Product Profitability n) Branch Profitability o) Branch Manager daily / monthly position |
| 32 | <p><u>Loan Accounting Standard Reporting</u> The system must provide this function with at least the following information and supporting processes. A full list of all operational and exception reporting included in the proposed solution must be submitted with the following report descriptions,</p> <ul style="list-style-type: none"> ▪ Report title ▪ Brief report purpose and focus description ▪ Frequency ▪ Major sort sequence ▪ Major sub-totals and grand totals ▪ Media |

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5.1.3.5 General Ledger and Financial Control

5.1.3.5.1 General Ledger

The general ledger is the primary accounting record of the Bank or "the books of the bank" and is defined by the Bank's Chart of Accounts. All financial accounting transactions flow to and are posted to the ledger.

The general ledger accounts are the summation of related subsidiary ledgers. The sub-ledger are the accounting for the bank's core systems, such as, the deposit accounting system, loan accounting system, treasury accounting, etc.

The details of each individual transaction (e.g., geographic code, interest rate of the account, etc.) are stored and maintained in the subsidiary ledger system.

A subsidiary ledger (sub-ledger) is a Chart of Accounts grouping of individual Customer accounts within the general ledger. The grouping criteria are determined in response to management's business needs for controlling the financial activity of the Bank.

5.1.3.5.2 Financial Control

Financial reporting is intended to provide information for making business and economic decisions. Financial reporting is used for the bank's internal funds management, asset liability management, capital adequacy planning and profitability analysis. The banking sector financial reporting to the National Bank assists with decisions about allocation of resources in a country's economy.

Financial reporting is derived from accounting information. It is required that the General Ledger and Financial Control Solution applies accounting policies and standards, which will ensure consistent measurement and subsequent analysis of the financial records of the bank. Accuracy, completeness and availability are the primary qualities of useful decision-making information. To be relevant, information must be timely and it must have predictive value, feedback value or both. To be reliable, information must have integrity and it must be verifiable and transparent. Increased relevance and reliability make information a desirable commodity in decision-making.

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5.1.3.5.3 Features/Functions/Data Groups

The target General Ledger and Financial Control solution requires, but is not limited to, the following chart of features, functions and major data groups.

| # | Required Features/Functions/Data Groups |
|---|---|
| 1 | <p><u>Holding Company, Bank, Branch consolidation</u> The system must provide this function with at least the following information and supporting processes.</p> <p>Mapping tables allowing rollup and consolidated reporting at the holding company level, including multiple entity configurations where individual institutions use dissimilar charts of accounts.</p> |
| 2 | <p><u>Chart of Accounts versions</u> The system must provide this function with at least the following information and supporting processes.</p> <p>Linkage from old Chart of Accounts to newly adopted Chart of Accounts. Sub-ledger account numbering (e.g., deposits, loans) must be independent of Chart of Account changes.</p> |
| 3 | <p><u>Fully Integrated</u> The system must provide this function with at least the following information and supporting processes. An integrated general ledger that organizes and reports on transactional information from and at literally any cost center, branch, or other user-defined level. The general ledger will support:</p> <ul style="list-style-type: none"> ▪ balance sheet and profit & loss reporting, ▪ budgeting, ▪ cost center accounting, and ▪ holding company consolidation, <p>all within a framework of user defined configuration and reporting options.</p> |
| 4 | <p><u>Revaluation</u> The system must provide this function with at least the following information and supporting processes.</p> <p>The system automatically revalues all foreign currency assets and liabilities and also outstanding foreign exchange contracts with the equivalent amount in VND and USD; evaluate the benefit/loss from the Foreign Exchange transactions in local currency.</p> |
| 5 | <p><u>User defined balance sheet and profit and loss statement</u> The system must provide this function with at least the following information and supporting processes.</p> <p>Line items are defined by the Bank.</p> |
| 6 | <p><u>Manual entries</u> The system must provide this function with at least the following information and supporting processes.</p> <p>Ability to input entries directly into GL accounts.</p> |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 7 | <p><u>Reversals</u> The system must provide this function with at least the following information and supporting processes. All transactions posted to the GL must also be reversible.</p> |
| 8 | <p><u>History</u> The system must provide this function with at least the following information and supporting processes. A history of all transactions must be maintained for each GL and defined by the user, including previous Chart of Accounts for time series reporting.</p> |
| 9 | <p><u>Audit trail</u> The system must provide this function with at least the following information and supporting processes. A complete audit trail must also be maintained. Every posting made to any GL must be able to reference back to the sub-account and identify all transactions by user and branch.</p> |
| 10 | <p><u>Block transactions</u> The system must provide this function with at least the following information and supporting processes. GL accounts may also be blocked. The accounts exist on the system but transactions will not be posted. The user can unblock an account.</p> |
| 11 | <p><u>Close accounts</u> The system must provide this function with at least the following information and supporting processes. The Bank must also be able to close GL accounts.</p> |
| 12 | <p><u>Budgeting</u> The system must provide this function with at least the following information and supporting processes. The facility should allow multiple budgets to be maintained and controlled by the Bank.</p> |
| 13 | <p><u>Year End</u> The system must provide this function with at least the following information and supporting processes. Automatic yearend closing as defined and controlled by the user. Profit and loss accounts are brought to zero, net operating profit/loss is calculated and the system readies itself for a new accounting year.</p> |
| 14 | <p><u>Tax Management</u> The system must provide this function with at least the following information and supporting processes. A parameter driven component that allows the Bank to define the tax structure and calculate local and National taxes due.</p> |

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| # | Required Features/Functions/Data Groups |
|----|---|
| 15 | <p><u>Bank Guarantee Controls</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> ▪ Pending interest ▪ Waived or canceled interest |
| 16 | <p><u>Regulatory reporting</u> The system must provide this function with at least the following information and supporting processes. Well-developed facility for reporting to banking regulatory agencies, and The National Bank of Ukraine.</p> |
| 17 | <p><u>International Standard Chart of Accounts</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) flexibility for Ukrainian accounting rules b) standard account reporting c) holding company/bank/branch/department structure d) user definable account structure e) at least four (4) levels of segmentation in line item account code f) branch clearing line items for intra-bank transactions |
| 18 | <p><u>Sub-classifications</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) agency accounting b) IMF report structure c) monetary policy d) economic statistics e) profitability centers for treasury reporting |
| 19 | <p><u>Cost Accounting</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) cost of funds allocation b) shared expenses c) overhead allocation |
| 20 | <p><u>Fixed Assets</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Inventory (description, serial #'s, location) b) variable depreciation periods c) variable depreciation formulas d) asset sales new asset purchase e) transfer asset from one branch to another one |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 21 | <p><u>"Snap shot" of account activity</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) transaction query by account b) account balance query c) "one-time" account query (branch, department level) |
| 22 | <p><u>Manual journal entries</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) batch entry capability b) data validation edit for online entry c) reversals d) block transactions |
| 23 | <p><u>Operating and proof reports</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) daily trial balance b) by main branches, sub-branches c) departments d) strategic business units (e.g., retail, corporate, etc.) e) bank consolidated f) holding company |
| 24 | <p><u>Foreign exchange control (off balance sheet)</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) spot currency position account b) forward currency position account c) net currency position account |
| 25 | <p><u>Financial Reporting, e.g., but not limited to:</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) balance sheet b) income statement c) cash flow d) funds management e) historic and time series analysis |

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| # | Required Features/Functions/Data Groups |
|----|---|
| 26 | <p><u>Report writer and generator</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) standard report formats b) user definable report formats |
| 27 | <p><u>Exception reports</u>, e.g., but not limited to: The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) overdrawn nostro b) account exceptions c) significant balance change reports d) significant transaction reports |
| 28 | <p><u>Management planning</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) budget plan b) profit plan c) forecasting |
| 29 | <p><u>Financial ratios</u>, e.g., but not limited to: The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) return on average assets b) return on average equity c) net interest spread d) non interest income as a percentage of average assets e) earning assets to total assets f) non performing loans to total assets g) non performing loans to total loans h) non performing loans to total capital i) earning assets as percentage of total assets j) interest bearing liabilities as percentage of total liabilities k) interest bearing liabilities as percentage of total interest bearing liabilities l) non earning assets as a percentage of total earning assets |

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| # | Required Features/Functions/Data Groups |
|----|--|
| 30 | <p><u>Off balance sheet risk</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) credit risk b) concentration risk c) interest rate risk d) liquidity risk |
| 31 | <p><u>Off balance sheet controls, e.g., but not limited to:</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) loan commitments b) standby l/c c) foreign exchange d) guarantees |
| 32 | <p><u>Internal controls, e.g., but not limited to:</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) full end-to-end transaction audit trails from entry, subsidiary ledger, general ledger b) dual control for selected data entry functions, i.e. adjustments to customer accounts |
| 33 | <p><u>General Ledger Accounting Standard Reporting</u> The system must provide this function with at least the following information and supporting processes. A full list of all operational and exception reporting included in the proposed solution must be submitted with the following report descriptions,</p> <ul style="list-style-type: none"> ▪ Report title ▪ Brief report purpose and focus description ▪ Frequency ▪ Major sort sequence ▪ Major sub-totals and grand totals ▪ Media |

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5.1.3.6 Branch Automation

5.1.3.6.1 General Requirements

An automated branch system is still the primary bank delivery facility internationally. It is the major Bank-Customer interactivity that captures and delivers banking transaction data to a core banking application and information back to the Customer.

The branches have two main functional activities, the cash teller activities and accounting teller (Platform) activities. Platform activities are business development and Customer service related functions, and cash teller activities are transactional functions related to payment processing.

The branch automation solution must be completely compatible with, and "seamlessly" interact with the centrally processed core banking applications and the data warehouse.

The branch solution is expected to provide the end-user (Customer and account officer) interface to the central core solutions. The branch solution is expected to,

- Be on-line and interactive with the central databases,
- Capture in a store and forward methodology (for contingent reasons) and pass all transactions to the central processing center for immediate update to the intra-day positions and for end of day (EOD) bank-wide processing,
- Accept start of day (SOD) updated and changed account records only for refreshing the local branch databases for possible intra-day contingent processing (e.g., if the telecom lines are down),
- Accept daily and periodic branch report "data content" electronically and store on local servers for branch management display or local hard-copy print as required, and
- Provide a data-mining interface to the Bank's data warehouse for branch management and business analysts.

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5.1.3.6.2 Features/Functions/Data Groups

The target Branch Automation solution requires, but is not limited to, the following chart of features, functions and major data groups.

| # | Required Features/Functions/Data Groups |
|---|--|
| 1 | <p><u>Teller user Interface layer</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Displays designed for Item and Transaction processing b) Minimal display sufficient to quickly execute transaction c) Displays menu driven with help and natural flow d) Alternate direct display-to-display navigation for experienced teller e) Complete access to central databases f) Integrated workstation with small "footprint" <ul style="list-style-type: none"> ▪ Display ▪ Keypad designed for teller functions ▪ Receipt printer ▪ Signature verification, if required ▪ Security key pad for PIN, if required ▪ Cash drawer integrated into workstation |
| 2 | <p><u>Platform user interface layer</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Displays designed for complete customer view b) Ability to open, update, close Customer/Accounts online during Customer/officer meeting c) Summary and access to all detail on Customer and all accounts in Bank d) Displays menu driven with help and natural flow e) Alternate direct display-to-display navigation for experienced platform officer f) Complete access to central databases g) On request access and locally print interim and cycle statements h) Intuitive display navigation for capturing all new Customer and account data i) Warning message and interrupt the entry process to ensure required data is captured j) Warning message and override for high priority data k) Promotional reminders, if required l) Integrated workstations for account opening <ul style="list-style-type: none"> ▪ Display ▪ Full keypad ▪ Keypad for PIN number assignment ▪ Document printer nearby |

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| # | Required Features/Functions/Data Groups |
|---|--|
| 3 | <p><u>Customer cross selling</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Customer profileb) Product recommendationc) Scripted sales dialogd) Sales tracking |
| 4 | <p><u>Integration with central processing</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Store and forward all transactions to the central processing center<ul style="list-style-type: none">▪ intra-day positions▪ end of day (EOD) processing,b) Accept start of day (SOD) updated account files<ul style="list-style-type: none">▪ refreshing local branch databases (changes only)▪ Accept daily and periodic branch report▪ "data content" electronically▪ display print as requiredc) data-mining interface to data warehouse for branch management |
| 5 | <p><u>Branch control</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Teller drawer proofb) Branch detailed activity reconciliation and reporting to central sitec) Funds position and requirementsd) Currency reporting |

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| # | Required Features/Functions/Data Groups |
|---|---|
| 6 | <p><u>Branch security profiles</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Individual functional security profiles by staff member <ul style="list-style-type: none"> ▪ Authorized activities ▪ Teller ▪ Platform officer ▪ Adjustment type approvals ▪ Overrides ▪ Business days/work hours ▪ Assigned security administrator b) Hierarchical authorization c) Only one ultimate access at any one time d) Dual approvals, if necessary e) Branch level audit record of all logons, logoffs, activity |
| 7 | <p><u>Branch intra-day databases</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Compatible with central databases b) Customer c) Loans d) Deposits e) Accounting/branch ledger |
| 8 | <p><u>Branch contingency data</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Daily activity data retained for user defined period b) Operations activity and reconciliation c) Local branch position (official position at central site) |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|----|--|
| 9 | <p><u>Transaction and data updates</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Online, real time, interactive design with central databases b) Standard transaction set, e.g., but not limited to, <ul style="list-style-type: none"> ▪ Deposits, withdrawals, split deposits, loan payments, transfers, funds payment instructions, open, close, controls, etc. c) End-to-end process for transaction <ul style="list-style-type: none"> ▪ Entry ▪ Availability ▪ Pass-through branch to central ▪ Local update ▪ Central official update ▪ Debit/credit/intra-bank payment/inter-bank payment ▪ Completed transaction acknowledgement d) Internal control verification and continuous recording log of all attempted, successful, failed transactions |
| 10 | <p><u>Full function account control, e.g., but not limited to:</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Stop payments, b) Blocks, holds c) Fraud alerts d) Money laundering alerts e) Counterfeit currency alerts f) Bad checks/credit card alerts g) Check "kiting" alerts h) Overdrafts i) Past due loans j) Account officer daily exception review, override approval, issue/cancel controls <p><i>These control instructions must be accepted and logged at the Branch and passed to the Central system for update to the official records.</i></p> |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|----|---|
| 11 | <p><u>Off-line operation</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Capacity to continue basic transactions for multiple days b) Record transactions by process and effective date c) Automatically forward pending transactions to central processing site when connection re-established d) Manual intervention to release each days work required if multiple days pending e) Central site may or may not be able to process multiple end-of-days (EODs) in one pass <ul style="list-style-type: none"> ▪ Time constraints ▪ Functional constraints f) Internal control data bases, files and reports required to ensure complete and accurate updates |
| 12 | <p><u>Customer/Account search</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Legal name (family/first/other) b) Short name c) Any account number d) Street address/house number e) Customer ID f) Partial key search g) "String" search |
| 13 | <p><u>Central data warehouse access</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Data mining at branch back office workstations b) Limits required on query criteria c) Limits and warning required on size of result |
| 14 | <p><u>"Help" displays</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Each display b) Each object c) One central location to create and update help content at the Central Site and downloaded to the Branches |
| 15 | <p><u>Broadcast messaging</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Separate medium from other connectivity, e.g., email b) Emergency warning broadcast to every display or selective displays, e.g., branch manager only, branch only, etc. c) Audible alarm capability |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|----|---|
| 16 | <p><u>Electronic standard documents</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Store standard bank-wide documents electronicallyb) Print locally as neededc) e.g., loan application, account open, collateral registration, letters of credit, etc. |
| 17 | <p><u>Branch Accounting Standard Reporting</u> The system must provide this function with at least the following information and supporting processes. A full list of all standard operational and exception reporting must be provided including,</p> <ul style="list-style-type: none">▪ Report title▪ Brief description▪ Frequency▪ Major sort sequence▪ Major sub-totals and grand totals▪ Media |

Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

5.1.4 Network Access and Service Performance

5.1.4.1 General Requirements

Access Security

The following chart highlights several areas within and outside the bank that require security concerns.

Service Performance

Monitoring the performance of the Banking System is important to ensure that the system meets the stated objectives, generates the sought-after improvements and benefits, and creates the required level of confidence from the End-User and the Customer

5.1.4.2 Features/Functions/Data Groups

The target Network and Security Access solution requires, but is not limited to, the following chart of features, functions and major data groups.

| # | Required Features/Functions/Data Groups |
|---|--|
| 1 | <p><u>Network Control Center</u></p> <p>The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Monitor and control the Bank's Networkb) Display all components and telecommunication nodes, main branch units, departments & ATM's external connections, e.g., but not limited to,<ul style="list-style-type: none">▪ National payment system▪ Credit card▪ SWIFT▪ International exchange, etc.c) Network Access Security Controld) Firewall protectione) Profiles for Components & End-usersf) Exception hardcopy for audit control<ul style="list-style-type: none">▪ Off-line status▪ Security access violationsg) Network scope & tracing monitor (limited access)<ul style="list-style-type: none">▪ Transmission data stream display▪ Protocol and character exceptionsh) Local Data manipulation capabilities, e.g., MSOffice "tool sets" |

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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|---|--|
| 2 | <p><u>Secure Item Processing</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) all banking transactions b) ATM transactions c) POS transaction d) Internet transactions e) SWIFT items f) Wire/telex transfers g) Inter-bank clearing transactions h) Intra-bank clearing transactions i) PIN management j) Biometric techniques |
| 3 | <p><u>Network Access Security</u> The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none"> a) Transaction protocols (e.g., SET, SSL) b) Trading protocols (e.g., PKCS#7, PKCS#10) c) Digital signatures d) Digital certification e) 128-bit or greater encryption f) Encrypting modems g) Public key infrastructure (PKI) h) Intrusion-detection technologies i) Operational security, hacking/spoofing detection j) Single sign-on and access control detection k) Virtual private networks (VPNs) l) Sign-on and Identification key cards m) Keyboard ballistics |

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Bank Customer Deposit and Plastic Card Payments Systems

Diagnostic and Accounting Enhancement Recommendations

| # | Required Features/Functions/Data Groups |
|---|--|
| 4 | <p><u>Performance Monitoring System</u></p> <p>The system must provide this function with at least the following information and supporting processes.</p> <ul style="list-style-type: none">a) Daily processing timetableb) Define system service levelsc) Appropriate reporting system to monitor the quality of the new services and demonstrate to End-Users.d) System availabilitye) The % of normal business hours for,<ul style="list-style-type: none">▪ Information Processing Center▪ Departmental access▪ Branch Connectivityf) Message throughput, e.g., but not limited to,<ul style="list-style-type: none">▪ Number of transactions per day▪ Number of updates per day▪ Peak hour transaction trafficg) Faults and errors, e.g., but not limited to:<ul style="list-style-type: none">▪ Number of faults (hardware and software) each month▪ Number, source and type of each error detected (data input, transmission, processing, validation, authentication)▪ Number of errors logged each day, including outage timeh) Response time to repair, e.g., but not limited to:<ul style="list-style-type: none">▪ MTTR for a major hardware fault▪ MTTR for a major software fault |

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EXHIBIT VI

Aval – Maturity and Interest
Rate Sensitivity Gap Reports

JOINT STOCK POST-PENSION BANK "AVAL"

AVAL BANK

MATURITY GAP REPORT

AND

INTEREST RATE RISK/REPRICING MATURITY GAP REPORT

MIS DEVELOPMENT PROJECT

SEPTEMBER 2000

submitted by

International Business & Technical Consultants, Inc.

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

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I. BACKGROUND

A. Project Overview

Under the sponsorship of the United States Agency for International Development (USAID) Contract # EPE-I-804-95-0056-00 was issued to International Business and Technology Consulting, Inc. (IBTCI) to lead the Ukrainian Bank Accounting and Operations Infrastructure Development Project. This advisor (Richard M Stitcher) was assigned on a short-term basis (from July 27 - September 29, 2000) to provide Aval Bank with technical MIS assistance in the development and delivery of a Maturity Gap Report and an Interest Rate Risk/Repricing Gap Report.

This project is only one element or deliverable falling under the umbrella of IBTCI's on-going larger project for Aval Bank. The main focus of this long-term initiative has been primarily to provide Aval Bank guidance, assistance, and direction in its transition from Ukrainian Accounting Standards to International Accounting Standards. A second element of the initiative is to assist in the enhancement of the Bank's internal audit functions. A third, but smaller, element of the project deals with providing assistance in the development of basic MIS reports for Aval's senior management team.

The majority of this assignment was devoted to working with the management and technical staff of the Asset and Liability Administration Section and the Methodology and Reporting Section of Aval Bank. One of the major responsibilities for both of these areas is to provide Aval Bank's Asset and Liability Committee (ALCO) with MIS support. ALCO at its bi-weekly meetings requires a substantial amount of MIS support in order to effectively fulfill its role of asset and liability related risk management within Aval. The management of interest rate risk exposure as well as liquidity exposure falls directly under ALCO and currently they do not have an appropriate level of MIS reports to properly manage these positions and potential risk exposures

B. Project Goals

This assignment falls under the goal which calls for assisting Aval Bank management in the development of more meaningful and effective MIS reports.

More specifically this IBTCI Advisor has been tasked with providing direction, advice and support to Aval Bank in the:

- Design, development, and delivery of a "Maturity Gap Report". This report will be available for use as a basic tool for the identification, measurement, monitoring and management of Interest Rate Risk by the ALCO of Aval Bank;
- Assurance that this basic management tool will be available as a periodic (bi-weekly) MIS production report for Aval senior management ALCO, and
- Working with an IBTCI colleague assist Aval Bank in the design, development, and delivery of a basic Interest Rate Risk/Repricing Gap Report for use by AVA management and ALCO.

C. Previous Initiatives

Aval's Asset and Liability Administration Section has had a goal of developing a meaningful Maturity Gap Report for a number of years. There are at least two levels of maturity gap reports currently in place. However, they are not focused or produced at the level where they can be effectively used by ALCO.

- The National Bank of Ukraine (NBU) Maturity Gap Report (Report # 631) is produced on a monthly basis and forwarded to NBU but its function and role is not to look at Aval Bank as a "going concern". It is structured by NBU to reflect the maturity gap positions on the Aval Balance Sheet from a "liquidation point of view". That is not the type of reporting that is required by ALCO for the management of interest rate risk exposure at Aval Bank on an on-going basis.
- The second maturity gap report that was reviewed during the project was the one that is attached to the published footnotes of Aval Bank's Annual Report(s) for both 1998 and 1999. These maturity gap reports are presented by Arthur Anderson Inc. the Bank's certified public accountants. These reports have also been presented from a "liquidation point of view". Again, reports of this nature cannot be and are not effective tools for the management of a bank from the perspective of an on-going business endeavor.

A parallel USAID effort to identify and enhance Aval's asset and liability management direction and controls was performed during May and June of this year. This *Asset and Liability Management Survey* was performed under the direction of Booz-Allen & Hamilton as a deliverable under their Commercial Bank Restructuring Project, which represents a parallel USAID, funded project. ALCO members and the Aval Management Board are redirected to that report which was issued on June 2, 2000 by Booz-Allen Hamilton to the Bank. This report has extensive narrative comments supporting "best practice" in banking asset and liability management considerations.

The recommendations and suggestion made by advisor Peter W. Hanney are still appropriate for ALCO and Aval and provide a significant amount of very clear and useful guidance for the Bank.

D. Meetings And Discussions

In order to develop the background necessary to understand the issues regarding maturity gap and interest rate risk/repricing gap reporting at Aval an on-going series of meetings, interviews, and general discussions were held over the course of the project. The initial stages of these contacts were strictly for fact-gathering purposes and touched on many areas of the Bank's activities, primarily within the Finance and Accounting Departments. Follow-up and the development of more focused clarifications were primarily held with and involved managers and staff from the Asset and Liability Administration Section and the Methodology and Reporting Section. Both of these areas fall under the organizational control and direction of Aval Bank's Department of Planning and Control.

This advisor would personally like to offer my sincere thanks and appreciation to all of the Aval Bank officers and employees who were instrumental in assisting me through the course of this project. Of special note, I would like to identify the following four employees who have provided a particularly high level of support for the project. Without their very capable, professional, and enthusiastic support of these efforts we would clearly not have been as successful as we were. They are:

| | | |
|-------------------|---|---|
| Nikolay Linder | - | Manager - Asset and Liability Administration |
| Anna Tarnavka | - | Manager - Methodology and Reporting |
| Taras Tyshchenko | - | Senior Economist - Asset and Liability Administration |
| Oleksandr Hohchuk | - | Senior Analyst - Methodology and Reporting |

These members of the Bank's staff strongly supported and facilitated this project effort despite the obvious pressures and continuing responsibilities to address their regular day-to-day job responsibilities. Without their support, hard work and dedication to getting this job done Aval Bank would not have this new set of MIS tools that are now available to ALCO.

II. INTEREST RATE RISK EXPOSURE

A. Risk Identification

Accurate and timely measurement of interest rate risk is necessary for proper risk management and control. Aval Bank's risk measurement system should be able to identify and quantify the major sources of the Bank's interest rate risk exposure. The system also should enable management to identify risks arising from the Bank's customary activities and new businesses. The nature and mix of a Bank's business lines and the interest rate risk characteristics of its activities will dictate the type of measurement system required. Such systems will vary from bank to bank. Every risk measurement system has limitations, and systems vary in the degree to which they capture various components of interest rate exposure. Many well-managed banks will use a variety of systems to fully capture all of their sources of interest rate exposure. The three most common risk measurement systems used to quantify a bank's interest rate risk exposure are repricing maturity gap reports, net income simulation models, and economic valuation or duration models

Such systems must provide adequate, timely, and accurate information if the bank is to identify and control interest rate risk exposures. Interest rate risk may arise from a variety of sources, and measurement systems vary in how thoroughly they capture each type of interest rate exposure. To find the measurement systems that are most appropriate, bank management should first consider the nature and mix of its products and activities. Management should understand the bank's business mix and the risk characteristics of these businesses before it attempts to identify

the major sources of the bank's interest rate risk exposure and the relative contribution of each source to the bank's overall interest rate risk profile. Various risk measurement systems can then be evaluated by how well they identify and quantify the bank's major sources of risk exposure.

B. Repricing or Maturity Mismatch Risk

The focus of this project is centered on the need for a more useful level of gap reporting within the Bank. It is clear that gap reporting can and is an effective method of managing risks in the following two risk exposure areas:

- **Interest rate risk** - The risk to earnings or capital arising from movements in interest rates. Interest rate risk arises from differences between the timing of rate changes and the timing of cash flows (repricing risk); and from changing rate relationships among different yield curves affecting bank activities (basis risk); from changing rate relationships across the spectrum of maturities (yield curve risk).
- **Liquidity risk** - The risk to earnings and capital arising from a bank's inability to meet its obligations when they come due, without incurring unacceptable losses. Liquidity risk includes the inability to manage unplanned decreases or changes in funding sources. Liquidity risk also arises from the failure to recognize or address changes in market conditions that affect the ability to liquidate assets quickly and with minimal loss in value

The interest rate risk exposure of banks can be broken down into four broad categories: repricing or maturity mismatch risk, basis risk, yield curve risk, and option risk. In this project we are concerned with maturity and repricing risk which results from differences in the timing of rate changes and the timing of cash flows that occur in the pricing and maturity of a bank's assets, liabilities, and off-balance-sheet instruments. Repricing risk is often the most apparent source of interest rate risk for a bank and is often gaged by comparing the volume of a bank's assets that mature or reprice within a given time period with the volume of liabilities that do so. Some banks intentionally take repricing risk in their balance sheet structure in an attempt to improve earnings. Because the yield curve is generally upward sloping (long-term rates are higher than short-term rates), banks can often earn a positive spread by funding long-term assets with short-term liabilities. The earnings of such banks, however, are vulnerable to an increase in interest rates

that raises its cost of funds. Banks whose repricing asset maturities are longer than their repricing liability maturities are said to be "liability sensitive," because their liabilities will reprice more quickly. The earnings of a liability-sensitive bank generally increase when interest rates fall and decrease when they rise. Conversely, an asset-sensitive bank (asset repricings shorter than liability repricings) will generally benefit from a rise in rates and be hurt by a fall in rates. Repricing risk is often, but not always, reflected in a bank's current earnings performance. A bank may be creating repricing imbalances that will not be manifested in earnings until some time into the future. A bank that focuses only on short-term repricing imbalances may be induced to take on increased interest rate risk by extending maturities to improve yield. When evaluating repricing risk, therefore, it is essential that the bank consider not only near-term imbalances but also long-term ones. Failure to measure and manage material long-term repricing imbalances can leave a bank's future earnings significantly exposed to interest rate movements.

The following table summarizes the types of interest rate exposures that maturity gap and interest rate risk/repricing measurement techniques address.

| Valuation | Gap Report | Earnings Simulation | Economic |
|-------------------------------------|------------|---------------------|--|
| Short-Term Earnings Exposure | Yes | Yes | Generally does not distinguish accounting short-term earnings from changes in economic value |
| Maturity Risk Exposure | Yes | Limited* | Yes |
| Repricing Risk | Yes | Yes | Yes |

* The ability of these types of models to capture this type of risk will vary with the sophistication of the model and the manner in which bank management uses them.

C. Risk Measurement

The sophistication of the risk measurement and management system will increase with the size, complexity, and geographic diversity of each bank. All sound risk management systems, however, have several common fundamentals. For example, bank staff responsible for implementing sound risk management systems should perform those duties independently of the bank's risk-taking activities.

We can see that this concept is soundly in place within Aval Bank. The Asset and Liability Administration Section and the Methodology and Reporting Section among other areas in the Department of Planning and Control have been created to support ALCO and the senior management MIS needs of the Bank.

Regardless of the risk management program's design, it should include mechanisms for identifying, measuring, controlling, and monitoring risks. In a brief explanation of each of these points I have listed beneath (in italics) what Aval Bank's current status is:

- **Identifying** - Proper risk identification focuses on recognizing and understanding existing risks or risks that may arise from new business initiatives. Risk identification should be a continuous process, and should occur at both the transaction and portfolio level.

The Aval Management Board fully understands the importance of management's role in identifying and managing risk exposure across several areas of the Bank's activities. Systems are in place and the Bank has been and continues to develop an infrastructure across Aval to support these activities.

- **Measuring** - Accurate and timely measurement of risks is a critical component of effective risk management. A bank that does not have a risk measurement system has limited ability to control or monitor risk levels. The sophistication of the risk measurement tools a bank uses should reflect the complexity and levels of risk it has assumed. Good risk measurement systems assess both individual transactions and portfolios. The bank should verify the integrity of the measurement tools it uses periodically.

Through the Planning and Control Department many steps have been taken over the years to develop and enhance measuring methodologies to assist senior management in risk management. With the completion of the two gap related reports identified throughout this report, Aval will significantly enhance their gap management toolset.

- **Controlling** - The Bank should establish and communicate risk limits through policies, standards, and/or procedures that define responsibility and authority. We can see that the Aval Bank Management Board has already published such policies and procedures within the bank.

During the first half of 1999 the Bank issued two relevant policies. . They were the charter for the Provision on Asset-Liability Committee (ALCO) and the policy on establishing the Asset and Liability Administration Section within the Department of Planning and Control. These control limits should be meaningful management tools that can be adjusted if conditions or risk tolerances change. The Bank should have a process to authorize exceptions or changes to risk limits when they are warranted.

- **Monitoring** – The Bank should monitor risk levels to ensure timely review of risk positions and limit or policy exceptions. Monitoring reports should be frequent, timely, accurate, and informative, and should be distributed to appropriate individuals for action when needed.

Over time the ALCO has developed and use many different levels of management reports in order to provide the necessary information for them to manage risk exposures within the organization. Over the years in banking in general a basic profile of “traditional risk management reports” have evolved. In a general sense they include, but are certainly not limited to the following:

BASIC MENU OF MANAGEMENT REPORTS

(Note—These reports are in addition to standard financial reports)

Daily:

- Flow of Funds by HO and Branch

- Consolidated Foreign Currency Position
- Cash Position/Requirements for Branches

Weekly:

- Movement in Large Loans
- Gap Reports-
 - Maturities of Assets & Liabilities
 - Repricing Intervals of Assets & liabilities
- Past Due Loan Report
- Large Withdraws and Deposits

Monthly:

- Net Interest Margin Analysis
- Credit Portfolio Reports (i.e.: new loans, paid off loans, extended/renewed loans, industry/geography, etc.)
- Credit Watch List
- Interest Income/Expense Reasonability Report
- Branch Profitability

(Note: the above listing is maintained on the IBTCI-Kiev Project WWW Home Page)

From this advisor's discussions and interviews over the course of this project he has been able to determine that many, if not most, of the reports identified in the above listing are produced and used in the management of risk exposure within Aval Bank. The most obvious shortfall in ALCO's report mix is the lack of gap reporting as underlined in the above list.

III. FINDINGS AND RECOMMENDATIONS

A. Status of the ALCO Maturity GAP Report

Substantial progress was achieved in the development of the Aval ALCO Maturity Gap Report (ALCO GAP) over the period of the project. This advisor left the Bank on 9-29-00 after attending a scheduled Aval ALCO meeting the prior day. At that meeting a preliminary draft of the ALCO GAP was presented and discussed with the committee members. The Asset and Liability Administration Section manager (N. Linder) in cooperation with the Methodology and Reporting Section' Senior IT Analyst (O. Hoshchuk) were charged by ALCO to continue and complete the development and delivery of the ALCO GAP as quickly as possible so that this production report could become a regular part of the MIS package used by ALCO at their bi-weekly meetings. ALCO members showed strong interest in the results of the project and indicated that the final draft versions of the ALCO GAP package should provide them with valuable insight into Aval's gap management process.

B. Status of ALCO Interest Rate Risk/Repricing Gap Report

There are many ways of measuring exposure to interest risk. In Aval Bank we have chosen the simplest measure, not necessarily the best measure, as the Vicont database does not currently contain either properly detailed Maturity Date information for each customer and/or account nor does it contain the data required for measuring interest risk exposure in accordance with best practice, We have chosen to focus our efforts on the identification of interest rate sensitive versus non-sensitive assets and liabilities. By taking this approach and recommending a linkage to the Maturity Gap Report completion it was our best judgment this approach would suffice as an initial ALCO measurement tool in the short term.

Aval Bank should aim for an easy to implement measure which we have agreed will be based on a modified version of the Maturity Gap Report currently in its trial stages. In the longer term better measures of interest risk can be developed but these require much greater effort.

Clearly there are better and more sophisticated models and approaches that Aval could use for interest rate risk/repricing gap measurement but the approach taken at this time should be

sufficient until additional repricing date and rate related data can be developed and populated in the Bank's customer database.

C. Database Adequacy and Data Integrity

The Vicont database does not adequately support the full delivery of a solid and accurate core of information on customers and accounts so that there can be a seamless download to the Maturity Gap Report. There are numerous instances where customer maturity date, residual maturity date, loan agreement terms and conditions and other critical information to support the delivery of the Maturity Gap Report are either incorrect or missing, from the Vicont database in either the synthetic and/or the analytical subsidiary accounts.

As related to basic information on interest rate repricing dates; terms and conditions of interest repricing agreements; caps on either interest rate increases or decreases; frequency and/or limitations on timing for interest rate changes; etc. are not maintained in the Vicont database. In order to develop a fully functional interest Rate Risk/Repricing Report model a full analysis of the Vicont database structure and an accurate determination of specific customer and account related data requirements must be performed. Such an analysis should be initiated and managed by the end user department who will be using the output from a repricing risk exposure system. The full participation and support of the IT department and senior management will be required for such a project.

At the ALCO meeting attended on September 28, 2000 it was the impression left with this advisor that the membership of the committee was fully supportive of moving forward with an initiative to both clean or scrub the Vicont database to ensure that all maturity date required and related information was developed, entered into the database and maintained in a well controlled and secure fashion. The quality of these newly evolving MIS reports can only be as good as the quality and integrity of the underlying foundation of data. ALCO was supportive of the need to initiate this data cleanup project and fully appreciated and understood that the end user departments responsible for initiating the data (credit, accounting, investments, administration, deposit accounting, etc.) were also the responsible departments within the Bank to cleanup and properly maintain the data going forward. The Asset and Liability Administration Section under the Planning and Control Department should be responsible for managing at a higher level the

data cleanup initiative. Senior management should be willing to delegate not only the responsibility but also the underlying authority necessary to get the job done in a timely manner. It is this advisor's impression that the Aval ALCO members are supportive of these concepts.

D. Recommended Future Direction

For monitoring purposes, most western banks comparable to Aval try to bring all risks together using a statistically based technique known as Value at Risk (VaR). This has the advantage of allowing different risks to be combined into a single figure (e.g. FX, Liquidity and Interest Rate) It therefore becomes possible to represent most of the risks within a balance sheet as a single figure. The single figure is then monitored against the single figure limit set by ALCO. International off-site supervision (Bank of International Settlements) is also moving to the use of VaR to monitor risk. VaR as an approach to interest rate risk exposure and management is considerably more complicated to calculate and relies either on historical data or on data simulated from future expectations. In the long term Aval Bank should be developing a VaR based system similar to best current Western practice

More specifically we suggest that the Bank should aim for:

- **Short Term** - Measurement of development of both reports (maturity and interest) and run them as prototypes until assured that they are an accurate representation of the Aval risk exposures. Once the modified version of the Maturity Gap Report is put into regular production the Interest Rate Risk/Repricing Gap Report effort should commence.
- **Medium Term** – Complete and put into production for ALCO use the Maturity Gap Report. Then continue with the measurement of interest risk based on repricing dates (date when the interest on the asset / liability may change). This requires that the database be modified to capture repricing data.
- **Long Term** - Measurement of interest risk based on duration analysis. This technique requires the calculation of the present value of interest sensitive assets and liabilities. It is useful for both measuring the risk and calculating the hedge necessary to reduce the risk. This requires even more substantial modification to the database than the medium term

measures. Strong consideration should be given to purchasing software specific to these more complex and sophisticated presentations for ALCO's use.

We recognize that the final draft versions of the Maturity Gap Report and the preliminary draft version of the Interest Rate Risk/Repricing Gap Report represent a very good start in this area of risk exposure identification, measurement and management. However, they do not represent the end point for this initiative. There is still a great deal of work that needs to be done to fine-tune and perfect not only these gap reports but also the Vicont data base structure and the quality of the underlying customer or account level Analytical Data that is maintained by Aval Bank.

E. Purchased Software Option (In-House Development or Software Vendor)

A bank may either design and develop risk measurement models internally or purchase them from an outside vendor. Developing an in-house model is often preferable because the model can be tailored to the bank's unique business mix. To develop its own model, a bank must be able to commit sufficient money and staff members to ensure the integrity of the model's design and algorithm and to maintain the model. Because as few as one or two employees may come to be the bank's acknowledged experts on the in-house model, management should ensure that there is sufficient documentation to enable others to maintain and support the model in the absence of these key employees.

Using a model developed by a third-party vendor can reduce resource requirements, as well as start-up times and costs. For banks with limited staff resources, some vendor models may offer a fuller and more comprehensive risk measurement system than what the bank could develop internally. The use of vendor models may free the bank's staff from programming efforts and allow more resources to be devoted to the qualitative issues of interest rate risk management. But some banks have found even external models costly to implement. Vendor models may not be able to capture all of the types of instruments the bank holds or all facets of a bank's risk exposure. Vendor models can become "black boxes" to inexperienced users, who obtain output without fully understanding the modeling process. This imperfect knowledge can produce undetected errors and misleading or incorrect results. Before selecting a model, a bank must determine what model features it needs and examine alternative packages based on those

needs. Above all, management should consider the ability of bank personnel to understand and update the model.

Selecting a model that is too complex for staff members can stymie interest rate risk management. Banks should have systems in place that can identify, measure, monitor, and control the major sources of the bank's interest rate risk exposure. A bank's model should be able to handle every type of financial instrument (on- and off-balance-sheet) that the bank uses. For example, the model selected by a bank holding adjustable rate mortgages should be able to handle periodic and lifetime caps on interest rates, different prepayment estimates, as well as the calculation of amortization schedules.

Management should ensure that the reports generated by the model are easy to prepare and interpret. If the bank will use the model in its budgeting and planning process, the model should be able to track and compare actual results with projections. Banks should consider the type of hardware needed to run the model or software package. Some questions to ask are:

- Will the model be run on a personal computer or the bank's mainframe?
- How long will it take to run the model?
- Will the model expend so much computer time that the production of other computer-generated reports will be compromised?

When considering models supplied by outside vendors, management should:

- Evaluate the financial strength of the vendor as well as the support the vendor will provide;
- Find out whether the vendor will supply initial and ongoing support using hotlines, training, and consultants;
- Determine how frequently the software will be updated, how the bank will obtain the updates, and how the vendor validates models and new software releases;
- Find out how the vendor supports older releases of a product that has been updated;

- Understand how easy is it for model users to discover and track errors. (A model that can flag inconsistent data, say, when a user inputs a level of maturity balances that exceeds outstanding current balances, facilitates the early discovery of errors); and
- Ensure that comprehensive documentation on the model's operation should help track errors.

Bank management might also want to consider:

- Whether the bank needs a menu-driven system or one that is programming oriented. Although menus are generally more user-friendly, systems with programming capabilities may be more flexible;
- The number of accounts and different products that a model can accommodate to ensure that the model meets the bank's current and projected needs;
- Whether the bank as well as the vendor can add or modify accounts analyzed by the model;
- Whether the time periods (months, quarters, years) that the model can project fit the structure of the bank's balance sheet;
- How many interest rate scenarios the model can run and whether the scenarios are generic or can be specified by the bank;
- How many "driver" market interest rates and yield curves the model allows;
- Whether the process by which data is input into the model preserves the data's accuracy and integrity. Management should consider how much data must be inputted and whether it must be manually entered or can be extracted directly from the bank's operating systems;

- The types of analyses that the model is capable of producing, such as gap reports and comparisons of net income under alternative interest rate scenarios;
- Whether the model can calculate duration and market valuations; and
- Whether the vendor has staff members who can prepare special reports at the bank's request in addition to standard reports.

As a related issue it should be noted that IBTCI recently sponsored a parallel project which called for the review of the *Aval Bank Customer Deposits and Plastic Card Payment Systems Diagnostic and Accounting Enhancement Recommendations Project*. This review was performed by IBTCI advisor Michael Sprague over the months of August and September 2000. As part of his suggestions and recommendations to Aval he indicated that strong consideration should be given to reviewing and/or evaluation of software packages that might more effectively support the bank's application IT needs in some or all of its major customer oriented and internal processing delivery systems.

This advisor would also suggest that the Asset and Liability Administration Section under the direction of N. Linder, and for the benefit of ALCO, be encouraged to search in the financial/banking software vendor market place to see if a purchased package solution might be a more appropriate means of developing the necessary MIS infrastructure needed by ALCO. Although ALCO has a basic but fundamental approach that currently permits it to measure, monitor and manage Aval's Interest Rate Risk exposure there are many more sophisticated solutions that could be implemented going forward.

The following list of major software vendors (listed by Michael Sprague in his diagnostic report) would be a good starting for the Asset and Liability Administration Section in trying to research what model based options might be available to the bank. By no means is this list complete nor are any of these vendors being explicitly recommended. Aval through ALCO must determine what is best IT solution for the bank at this point in time.

Well-known, international, banking software vendors who could be contacted are:

- Financial Object, London
- Midas Kapiti International, London
- Infosys Technologies, Bangalore, India,
- Sanchez, PA, USA
- Callataÿ & Wouters, Brussels, Belgium
- Alltel, USA/France

IV. DISTRIBUTION OF REPORT

A Final copy of this report (hardcopy and disk) was left with IBTCI Project Lead Gary Fechtmeyer in Kyiv and he indicated that once it was fully translated he would deliver to Aval Bank's senior management and to Boris von Hoffman. the Ukraine USAID Project Director.

A final copy of this report will also be delivered by priority mail to IBTCI corporate headquarters in McLain, VA. It is directed to the attention of Patricio Crespo, Vice President of IBTCI for appropriate review, and copying, and distribution to USAID Washington, DC.

V. EXHIBITS

| | |
|--|------------|
| A. Final Aval Bank Maturity Gap Reports (MGR) | |
| 1. Aval MGR – Summary Format | - 28-09-00 |
| 2. Aval MGR – With Non-Maturity Date Details | - 26-09-00 |
| 3. Aval MGR – With Assumptions/Rules for Forced for ALCO's Temporary Use | - 28-09-00 |
| B. IBTCI Maturity Gap Recommendations | |
| 1. IBTCI Maturity Gap Format and Presentation | - 16-08-00 |
| 2. Final IBTCI Specifications for Maturity Gap Report 09 -00 | - 08 thru |
| C. IBTCI Interest Rate/Repricing Gap Recommendations | |
| 1. IBTCI Interest Rate/Repricing Gap Report Format and Presentation | - 16-08-00 |
| 2. Final IBTCI Specifications for Interest Rate/Repricing Gap Report 09 -00 | - 08 thru |
| D. Original IBTCI Specifications for Maturity Gap | - 04-00 |
| E. Aval Additions to Maturity Gap Report Specifications | - 12-08-00 |
| F. Aval Recommended Gap Report(s) Trend Analysis Cover Memorandum | - 15-08-00 |
| G. IBTCI ALCO and Maturity Gap Report Questions to Aval Management | - 10-09-00 |
| H. IBTCI Summary Memo To Aval ALCO Committee | - 20-09-00 |
| I. Advisor Contacts Made During Project 09 -00 | - 07 thru |
| J. Maturity Gap Report Project Plan | - 11-08-00 |
| K. Reference Materials Provided During Project 09 -00 | - 08 thru |

Notes:

- Following the 28-09-00 Aval ALCO meeting and upon completion of the final project report all report sections and related exhibits were translated into Ukrainian for distribution to Aval Bank's Management Board. Copies of both versions of the final report (English and Ukrainian) were also forwarded under separate cover to the USAID project Office in Kyiv.
- Upon return to the United States a complete hard copy of the English based report and exhibits were sent to IBTCI Headquarters in McLean, VA.

**Aval Bank Maturity Gap Report
for Asset/Liability Committee August 31, 2000**

IBTCI Advisor's Comment: The following Aval Maturity Gap report was developed using Customer Account Information from the Vicont Data Base on August 27, 2000. This extract and download program was developed by Aval's Asset and liability administration section and the Methodology and reporting section. The areas highlighted in the column farthest to the right of the report represent the aggregate customer information in each of these primary accounts which DO NOT HAVE MATURITY DATE INFORMATION for that customer or account. This represents a serious shortcoming in the quality of data maintained in the Vicont DB but can be resolved with close senior management attention and support.

| | Total | 1-7 Days | 8-31 Days | 32-92 Days | 93-183 Days | 184-365 Days | > 365 | No Maturity Date Info in Customer Record |
|---|-------------------------|-----------------------|----------------------|-----------------------|-----------------------|-----------------------|-------------------------|--|
| Assets | 2 288 076 802.09 | 460 530 867.35 | 52 637 906.18 | 228 748 725.10 | 168 854 183.93 | 312 803 545.03 | 626 482 815.75 | 440 018 758.74 |
| Cash and Metals | 126 402 279.38 | 56 355 017.95 | 0 | 0 | 0 | 0 | 70 047 261.43 | 0 |
| Placements with the NBU | 401 502 719.63 | 78 672 199.15 | 0 | 0 | 0 | 0 | 322 830 520.48 | 0 |
| Cash funds on demand accounts | 401 502 719.63 | 78 672 199.15 | 0 | 0 | 0 | 0 | 322 830 520.48 | 0 |
| Cash funds on term deposit accounts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Placements with other banks | 324 171 861.48 | 182 949 577.88 | 0 | 26 762 395.26 | 17 841 575.92 | 18 736 108.15 | 33 510 227.94 | 44 371 976.33 |
| Cash funds on demand accounts | 54 415 839.29 | 54 415 839.29 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cash funds on term deposit accounts | 235 978 697.31 | 190 264 029.16 | 0 | 8 089 647.93 | 6 247 453.43 | 7 016 140.65 | 0 | 24 361 426.44 |
| Cash funds on accounts of guarantees | 44 326 287.30 | 0 | 0 | 8 089 647.63 | 5 593 745.73 | 6 281 467.50 | 0 | 24 361 426.44 |
| Non-classified interbank loans | 46 820 376.76 | 0 | 0 | 7 320 000.00 | 6 000 376.76 | 0 | 33 500 000.00 | 0 |
| Classified interbank loans | 58 303 015.96 | 47 101 388.01 | 0 | 3 263 100.00 | 0 | 5 438 500.00 | 10 227.94 | 2 489 800.01 |
| Loan loss reserve | 6 840 676.56 | 0 | 0 | 0 | 0 | 0 | 0 | 6 840 676.56 |
| CURRENT LOANS (non-classified) | 584 054 874.84 | 69 159 554.35 | 23 948 470.32 | 105 662 726.30 | 106 151 045.44 | 186 972 093.02 | 91 694 737.07 | 466 248.44 |
| Current loans expected to be paid | 589 914 647.62 | 69 853 426.25 | 24 188 743.28 | 106 722 831.41 | 107 216 049.81 | 188 847 968.06 | 92 614 702.54 | 470 926.27 |
| General provision | 5 859 772.68 | 693 871.90 | 240 272.98 | 1 060 105.11 | 1 065 004.37 | 1 875 875.04 | 919 965.47 | 4 677.83 |
| CLASSIFIED LOANS | 370 990 210.25 | 22 043 701.25 | 2 617 342.24 | 21 945 132.10 | 41 807 581.49 | 105 908 981.71 | 92 630 092.40 | 84 037 419.05 |
| Loan balances | 486 266 705.68 | 28 893 263.73 | 3 430 619.87 | 28 764 066.54 | 54 798 279.41 | 138 817 684.37 | 121 412 718.27 | 110 150 073.47 |
| Loan loss reserve | 115 276 495.41 | 6 849 562.48 | 813 277.63 | 6 818 934.44 | 12 990 717.92 | 32 908 722.66 | 28 782 625.87 | 26 112 654.42 |
| SECURITIES FOR SALE | 17 248 926.92 | 17 248 926.92 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shares | 1 983 938.00 | 1 983 938.00 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vexels | 15 264 988.92 | 15 264 988.92 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bonds (except for OVDP & COVDP) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Provision against diminution in value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OVDP/COVDP | 170 836 500.00 | 9 158 800.00 | 0 | 0 | 200 000.00 | 0 | 12 798 500.00 | 148 679 200.00 |
| Marketable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-marketable | 170 836 500.00 | 9 158 800.00 | 0 | 0 | 200 000.00 | 0 | 12 798 500.00 | 148 679 200.00 |
| Provision against diminution in value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER DEBT SECURITIES & SHARES | 8 511 018.52 | 0 | 0 | 0 | 0 | 0 | 0 | 8 511 018.52 |
| Marketable | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-marketable | 8 511 018.52 | 0 | 0 | 0 | 0 | 0 | 0 | 8 511 018.52 |
| Provision against diminution in value | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| INVESTMENTS INTO ASSOCIATES AND AFFILIATES | 10 957 187.96 | 0 | 0 | 0 | 0 | 0 | 142 546.00 | 10 814 641.96 |
| ACCRUED ACCOUNTS RECEIVABLE | 11 343 983.82 | 2 273 117.11 | 503 949.74 | 745 315.09 | 503 010.92 | 1 120 762.84 | 1 480 079.52 | 4 717 748.40 |
| Loans and deposits | 9 167 483.52 | 2 241 240.83 | 486 617.59 | 729 224.73 | 493 555.47 | 1 117 542.62 | 1 463 979.59 | 2 635 322.69 |
| COVDP and other securities | 1 489 392.51 | 0 | 1 458 178.92 | 0 | 8 376.37 | 2 837.22 | 0 | 0 |
| Other | 707 107.59 | 31 876.28 | 17 332.15 | 16 090.36 | 1 079.08 | 383 | 0 | 640 346.72 |
| OTHER RECEIVABLES | 119 260 754.87 | 22 107 500.21 | 25 549 589.88 | 71 570 999.11 | 29 205.67 | 3 460.00 | 0 | 0 |
| Other receivables | 119 274 011.14 | 22 120 756.48 | 25 549 589.88 | 71 570 999.11 | 29 205.67 | 3 460.00 | 0 | 0 |
| Clearing accounts | 13 256.27 | 13 256.27 | 0 | 0 | 0 | 0 | 0 | 0 |
| OTHER ASSETS, TOTAL | 142 796 484.52 | 582 472.54 | 18 554.00 | 62 157.24 | 2 321 784.49 | 62 159.31 | 1 348 850.90 | 138 420 506.04 |
| | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| LIABILITIES AND CAPITAL | 2 311 586 744.74 | 604 639 385.47 | 10 462 168.11 | 27 772 171.50 | 33 533 102.91 | 106 191 183.86 | 1 239 264 018.55 | 289 724 714.34 |
| DEMAND DEPOSITS | 1 626 854 140.89 | 592 571 095.31 | 0 | 0 | 0 | 0 | 1 034 283 045.58 | 0 |
| State budget | 270 970 819.41 | 42 465 386.75 | 0 | 0 | 0 | 0 | 228 505 432.66 | 0 |
| Corporate | 1 191 006 464.82 | 550 105 708.56 | 0 | 0 | 0 | 0 | 640 900 756.26 | 0 |

**Aval Bank Maturity Gap Report
for Asset/Liability Committee August 31, 2000**

IBTCI Advisor's Comment: The following Aval Maturity Gap report was developed using Customer Account Information from the Vicont Data Base on August 27, 2000. This extract and download program was developed by Aval's Asset and liability administration section and the Methodology and reporting section. The areas highlighted in the column farthest to the right of the report represent the aggregate customer information in each of these primary accounts which DO NOT HAVE MATURITY DATE INFORMATION for that customer or account. This represents a serious shortcoming in the quality of data maintained in the Vicont DB but can be resolved with close senior management attention and support.

| | Total | 0 - 7 Days | 8 - 31 Days | 32 - 92 Days | 93 - 183 Days | 184 - 365 Days | > 365 | No Maturity Date Info in Customer Record |
|---------------------------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|--|
| Individuals | 164 876 856.66 | 0 | 0 | 0 | 0 | 0 | 164 876 856.66 | 0 |
| TERM DEPOSITS | 296 735 160.29 | 1 756 590.99 | 5 999 944.50 | 27 513 942.89 | 33 339 678.54 | 87 550 154.02 | 23 303 741.32 | 117 271 108.03 |
| State budget | 11 153.73 | 0 | 0 | 0 | 0 | 1 153.73 | 0 | 10 000.00 |
| Corporate | 65 334 164.71 | 392 152.48 | 3 550 000.00 | 220 990.00 | 17 500.00 | 172 500.00 | 4 000.00 | 60 977 022.23 |
| Individuals | 231 389 841.85 | 1 364 438.51 | 2 449 944.50 | 27 292 952.89 | 33 322 178.54 | 87 376 500.29 | 23 299 741.32 | 56 284 085.80 |
| Own debt securities | 10 000 000.00 | 0 | 0 | 0 | 0 | 0 | 0 | 10 000 000.00 |
| CDs | 57 223 219.00 | 280 082.75 | 429 641.50 | 0 | 6 100.00 | 17 663 520.76 | 10 877.00 | 38 832 986.99 |
| DUE TO BANKS | 36 270 879.94 | 13 732 670.48 | 14 211 288.40 | 0 | 0 | 0 | 135 962.50 | 8 190 978.56 |
| Demand accounts | 11 827 020.08 | 11 827 020.08 | 0 | 0 | 0 | 0 | 0 | 0 |
| Term deposits | 8 365 010.56 | 0 | 717 882.00 | 0 | 0 | 0 | 0 | 7 647 128.56 |
| Interbank loans | 16 078 849.30 | 1 905 650.40 | 13 493 386.40 | 0 | 0 | 0 | 135 962.50 | 543 850.00 |
| DUE TO NBU | 23 984 315.29 | 0 | 0 | 0 | 0 | 0 | 4 225 923.92 | 19 758 391.37 |
| ACCRUED INTEREST PAYABLE | 14 610 752.92 | 2 202 484.93 | 116 659.31 | 234 879.19 | 97 085.37 | 881 992.88 | 47 883.71 | 11 029 767.53 |
| Deposits | 8 878 246.05 | 2 026 245.79 | 28 255.23 | 175 861.10 | 77 149.09 | 753 818.05 | 44 119.30 | 5 772 797.49 |
| NBU | 206 112.86 | 0 | 0 | 0 | 0 | 0 | 0 | 206 112.86 |
| Subordinated debt | 3 257 401.34 | 26 603.33 | 34 942.36 | 57 430.56 | 1 043.55 | 128 174.83 | 253.76 | 3 008 952.95 |
| Budget | 2 268 992.67 | 149 635.81 | 53 461.72 | 1 587.53 | 18 892.73 | 0 | 3 510.65 | 2 041 904.23 |
| PAYABLES AND OTHER ACCRUALS | 102 147 439.10 | 7 829 131.49 | 1 019 432.35 | 23 349.42 | 90 239.00 | 95 516.20 | 257 320.22 | 92 832 450.42 |
| Payables and other accruals | 96 087 109.92 | 1 768 802.31 | 1 019 432.35 | 23 349.42 | 90 239.00 | 95 516.20 | 257 320.22 | 92 832 450.42 |
| Clearing accounts | 6 060 329.18 | 6 060 329.18 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other liabilities | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| INCOME TAX | 3 876 533.57 | 0 | 2 896 490.45 | 0 | 0 | 0 | 980 043.12 | 0 |
| Current | 2 896 490.45 | 0 | 2 896 490.45 | 0 | 0 | 0 | 0 | 0 |
| Deferred | 980 043.12 | 0 | 0 | 0 | 0 | 0 | 980 043.12 | 0 |
| UNREGISTERED STATUTORY CAPITAL | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SUBORDINATED DEBT | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| CAPITAL | 176 155 183.68 | 0 | 0 | 0 | 0 | 0 | 176 155 183.68 | 0 |
| Equity | 102 356 787.68 | 0 | 0 | 0 | 0 | 0 | 102 356 787.68 | 0 |
| Retained earnings and reserves | 72 155 141.68 | 0 | 0 | 0 | 0 | 0 | 72 155 141.68 | 0 |
| Shares bought out | 1 643 254.32 | 0 | 0 | 0 | 0 | 0 | 1 643 254.32 | 0 |
| | -23 509 942.65 | -144 108 518.11 | 42 175 738.07 | 198 976 553.60 | 135 321 081.02 | 206 612 361.17 | -612 781 202.81 | 150 294 044.40 |
| Gap | -0.01 | -0.06 | 0.02 | 0.09 | 0.06 | 0.09 | -0.27 | 0.07 |
| OFF-BALANCE SHEET ITEMS | 55 835 853.44 | 0 | 0 | 0 | 0 | 0 | 0 | 55 835 853.44 |
| Group 90 | 111 663 990.31 | 0 | 0 | 0 | 0 | 0 | 0 | 111 663 990.31 |
| Group 91 | 55 828 136.87 | 0 | 0 | 0 | 0 | 0 | 0 | 55 828 136.87 |
| Group 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Group 93 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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Aval Bank - Proposed Maturity Gap Report
Financial data reported as of July 1, 2000 (000rph)

| | COA Reference | Total | 0-7 Days | 8-31 Days | 32-92 Days | 93-183 Days | 184-365 days | >365 Days |
|--|----------------------|------------------|-----------------|-----------------|----------------|----------------|----------------|----------------|
| Assets | | | | | | | | |
| Currency and Bank Metals | 100,101,110 | 102,058 | 100,633 | 0 | 0 | 0 | 0 | 1,425 |
| Due From NBU | 120,121 | 351,745 | 62,740 | 0 | 0 | 0 | 0 | 289,005 |
| Due From Banks | 150,151,1511,152,159 | 430,249 | 123,762 | 70,071 | 70,071 | 70,071 | 70,071 | 26,203 |
| Current Loans (Includes Classified Loan: | 20,21,22,24 | 780,720 | 0 | 113,606 | 113,606 | 113,606 | 113,606 | 326,296 |
| Classified Loans (included above) | 20,21,22,24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Investments For Sale (Trading Account) | 31,319 | 74,253 | 4,303 | 4,315 | 4,315 | 4,315 | 4,315 | 52,690 |
| Government Investments (OVDP/COVDF) | 14,149 | 123,268 | 0 | 0 | 0 | 0 | 0 | 123,268 |
| Other Investments & Equity Securities | 32,329 | 8,934 | 5,072 | 966 | 966 | 966 | 966 | 0 |
| Investments in Affiliated Companies | 41,42 | 10,620 | 0 | 0 | 0 | 0 | 0 | 10,620 |
| Accrued Income Receivable | numerous accounts | 24,209 | 6,052 | 18,157 | 0 | 0 | 0 | 0 |
| Misc. Receivables, etc. | numerous accounts | 120,143 | 55,872 | 64,272 | 0 | 0 | 0 | 0 |
| All Other Assets | numerous accounts | 156,670 | 0 | 0 | 0 | 0 | 0 | 156,670 |
| Total Assets | | 2,182,869 | 358,434 | 271,387 | 188,958 | 188,958 | 188,958 | 986,177 |
| Liabilities | | | | | | | | |
| Demand Deposits | 25,260,262 | 1,369,646 | 488,073 | 590,250 | 0 | 0 | 0 | 291,323 |
| Time Deposits | 25,261,263 | 273,513 | 0 | 60,260 | 60,260 | 60,260 | 60,260 | 32,475 |
| Certificates of Deposit | 332 | 56,872 | 0 | 14,218 | 14,218 | 14,218 | 14,218 | 0 |
| Due to Banks | 160,161,162 | 63,917 | 0 | 15,979 | 15,979 | 15,979 | 15,979 | 0 |
| Due to NBU | 130,131,132,133 | 36,984 | 0 | 0 | 0 | 0 | 0 | 36,984 |
| Accrued Interest Payable | numerous accounts | 14,780 | 0 | 3,358 | 3,358 | 3,358 | 3,358 | 1,350 |
| Accounts Payable and Accruals | numerous accounts | 118,374 | 29,594 | 88,781 | 0 | 0 | 0 | 0 |
| Income Taxes | 362 | 3,004 | 3,004 | 0 | 0 | 0 | 0 | 0 |
| Subordinated Debt | 3660 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| All Other Liabilities | 36,37,38 | 72,019 | 26,214 | 45,806 | 0 | 0 | 0 | 0 |
| Total Liabilities | | 2,009,109 | 520,671 | 818,652 | 93,815 | 93,815 | 93,815 | 362,132 |
| Capital | | | | | | | | |
| Stockholder Investment Pending Registra | 363 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital/Shareholder Equity | Class 5 | 173,760 | 0 | 0 | 0 | 0 | 0 | 173,760 |
| Total Capital | | 173,760 | 0 | 0 | 0 | 0 | 0 | 173,760 |
| Total Liabilities and Capital | | 2,182,869 | 520,671 | 818,652 | 93,815 | 93,815 | 93,815 | 535,892 |
| Gap Position | | | -162,237 | -547,265 | 95,143 | 95,143 | 95,143 | 450,285 |
| Gap/Total assets | | | -7.43% | -152.68% | 35.06% | 50.35% | 50.35% | 238.30% |
| Off-Balance Sheet (OBS) | | | | | | | | |
| Guarantees Likely to be funded | | not available | not available | not available | not available | not available | not available | not available |
| Claims Under Lkoans and Deposits | | not available | not available | not available | not available | not available | not available | not available |
| Claims Under Foreign Exchange | | not available | not available | not available | not available | not available | not available | not available |
| Claims Under Securities | | not available | not available | not available | not available | not available | not available | not available |
| Total Off-Balance Sheet | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gap Position Including OBS | | | -162,237 | -547,265 | 95,143 | 95,143 | 95,143 | 450,285 |
| Gap/Total assets+ OBS | | | -7.43% | -152.68% | 35.06% | 50.35% | 50.35% | 238.30% |

International Business & Technical Consultants, Inc.
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AVAL
FINAL RECOMMENDATIONS FOR MATURITY GAP REPORT
AUGUST/SEPTEMBER 2000

➤ **Original Gap Maturity Report Structure Guidance:**

- a) Period-end balances to be used not average balances
- b) Report should be segregated by foreign currency and National Currency
- c) Maturity intervals are: 1-7, 8-31, 32-92, 93-183, 184-365, and >365

a. FINAL GAP MATURITY REPORT STRUCTURE GUIDANCE:

○ **General Rules, Guidance and Calculations:**

- a. Report was developed to represent three viewpoints on the bank's balance sheet:
 - i. Hard Currency Denominated loan and deposit accounts (USA \$, German DM, British £, etc.)
 - ii. National Currency Denominated loan and deposit accounts (UAH and other soft currencies), and
 - iii. Adjusted National Currency view representing consolidated bank balance sheet.
- b. Maturity intervals were adjusted to coincide with the existing Maturity Indicator Code used by the AVAL Vicont database. In most cases the SQL extract program (download) will be instructed to identify residual maturity dates from Aval's analytical customer records. This permitted a more efficient download of data for aggregation and presentation in the Maturity Gap Report (GAP); The Maturity time-bands used in GAP are consistent with Aval's existing data structure. They are: 0 – 7 days (combined residual maturity codes Immediate, Overnight and 1 – 7

days); 8 - 31 days (combined residual maturity codes 8 – 22 and 23 – 31 days); 32 – 92; 93 - 183, 184 - 365, and >365.

- c. Aval (Asset and liability Administration Section) requested a separate level of preliminary Trend Analysis (Exhibit E) in order to more accurately represent several of the balance sheet Chart of Account (COA) areas for the final Maturity Gap report presentation to ALCO.
 - d. In some COA period end balances used were allocated to time bands not by their explicit maturity but on an estimated average or historical perspective basis.
 - e. The reports presented are based on COA book values rather than adjusted market values. Reserve and accrual accounts are all are treated on an aggregate basis. This approach will more accurately represent a closer approximation to market value for Aval COA assets and liabilities.
- o **Specific COA Rules, Guidance and Calculations:**
- a) **CASH** - Trend analysis performed to determine the average daily requirement of currency and coin to support all branch and headquarters activities. This amount placed in > 365 time-band for gap maturity purposes. Balance of currency and coin are placed in the 0 – 7 time-band.
 - b) **BANK METALS AND TRAVELERS CHECKS** - Basic assumption made that any precious metals held by the bank would be available for sale and would be placed in the 0 – 7 day time-band. All Travelers Checks are also placed in the 0 – 7 day time-band.
 - c) **DUE FROM NBU** – Calculate statutory reserve % against Total deposits (currently at 15%) and place that amount in >365 time-band. Balance of Due from NBU is placed in 0 – 7 time-band.
 - d) **DUE FROM BANKS** – Cash in Demand Accounts (presuming no maturity date data is indicated – probably should do an edit check to confirm the no date premise) would go into the 0 – 7 Day time band. The Time deposits should be placed in the appropriate time band based on the residual maturity date for that account balance. Deposits held to guarantee plastic card operations (or any other legally binding operational contract maintained by Aval with another bank requiring a deposit or guarantee) should be placed in the > 365 Days time band. Assumption can be made that these are long term deposits which will be held indefinitely or until the

agreement is rescinded with the correspondent bank. Non-Classified interbank loans should be placed based on their residual maturity date. Classified interbank loans based on their assigned NBU Classification Rating Code should have their residual maturity date increased by the number of days (30-90-180-365) linked with their specific classification. The Reserve associated with that classified interbank loan (20%-50%-100%) if substandard, doubtful or loss should be tied as a credit to the loan it represents and reduce the balance accordingly. The reserves that represent non-classified (2%) and Watch interbank loans (5%) should be netted in a pro-rata formula against the percent of the balance of the loan portfolio that they represent across all time bands.

- e) **CURRENT LOANS** – should be placed in their appropriate time band based on their residual maturity date.
- f) **CLASSIFIED LOANS** - Classified loans based on their assigned NBU Classification Rating Code should have their residual maturity date increased by the number of days (30-90-180-365) linked with their specific classification. The Reserve associated with that classified loan (20%-50%-100%) if substandard, doubtful or loss should be tied as a credit to the loan it represents and reduce the balance accordingly. The reserves that represent non-classified (2%) and Watch loans (5%) should be netted in a pro-rata formula against the percent of the balance of the loan portfolio that they represent across all time bands.
- g) **INVESTMENTS FOR SALE** – normally any Equity or Stock based investment should be placed in the 0 – 7 Day time band. A basic assumption would be that these investments held for sale or “marked to market” daily so that their book value is maintained accurately on Aval’s books. There should also be a determination that any equity investments held in this account are ‘readily marketable and 100% liquid’. It would be appropriate to do a strong edit check in any event to be sure the residual maturity date (if any) would ensure the equity would fall in the first time band.
- h) **OVDP/COVDP** – “truly marketable” OVDP and/or COVDP investments should be placed according to their actual residual maturity date in the appropriate time band. However, recent history leads us to believe that these investments should more than likely be considered to be non-marketable investments. This assumption is based on the recent history of non-payment and/or deferral without option by the Country of Ukraine they should be placed in the > 365 Days time band. It would also be appropriate to determine whether it is necessary to establish a reserve in the event of non-payment in order to reduce their book value closer to their true market value.

- i) **OTHER INVESTMENTS IN DEBT AND EQUITY SECURITIES** – assuming that these investments are held by the bank as true investment instruments and that they are marketable (even with a discount) they should be placed in a time band that is linked to their residual maturity date. In the event these investments are considered to “less than readily marketable” it would be appropriate to establish a reserve as an off-set to potential loss situations to Aval.
- j) **INVESTMENTS IN AFFILIATED OR SUBSIDIARY COMPANIES** – since investments of this nature are generally not considered to be “Ready for sale” or “traditional instrument based “Long Term Investments” I would recommend that all of these amounts be placed in the > 365 Day time band.
- k) **ACCRUED INCOME RECEIVABLE** - should be spread across the time bands based on their expected date of payment. Clearly these items need to link back to the specific customer account they represent and placed according to that maturity determination.
- l) **MISC. RECEIVABLES** - if the individual accounts receivable have residual maturity information then it should be used for time band placement. If there is no maturity information the assumption can and should be made that traditionally accounts receivable can be expected to be received within 30 days of their origination date. Any aggregate balance without maturity date information should therefore be spread across the first two time bands with 25% allocated to the 0 – 7 Days and 75% allocated to the 8 – 31 Days time bands respectively. If accounts receivable are “stale dated” that is they have not been received within the normal time frame I would suggest that they be evaluated for collect ability and placed in similar time bands as would substandard, doubtful or loss classified loans. This would also imply that specific reserves should be established and netted from the amount of the receivable just as if they were a classified loan.
- m) **ALL OTHER ASSETS** – since other assets with negligible value, all bank supplies, fixed and intangible assets (including: bank land, buildings, leasehold improvements, and any other personal or real property owned by the bank) would fall under this classification they should all be placed in the > 365 Days time band.
- n) **DEMAND DEPOSITS** – in all three demand deposit classification areas Trend Analysis will be performed in order to determine what the base of CORE DEPOSITS are within each of these categories. This “regularly maintained and stable base of deposits” will be placed in the > 365 time band. For example: With State Budget Funds they should be evaluated based on their historical funds flow/maturity movement. For State Pension Funds it was recommended that Trend Analysis be performed to determine what the regular outflow of pension funds is on a

calendar day basis and then once the average core deposit has been subtracted from this total using that analysis to place the appropriate funds into the 0 – 7 Days time band and the 8 – 31 Day time band. This placement in the two time bands will be determined and dependent by the time the report is run during the calendar month. All other State Budget Funds and any other special purpose government accounts (including quasi government accounts in the business category) will be analyzed in this fashion and placed in appropriate time bands. By using this approach the “real Core Deposits” of Aval bank will be segregated and placed in the > 365 Days time band. All other deposits will be placed based on averaging, trend analysis and realistic maturity date information. For the Business and individual demand deposits a similar trend Analysis and averaging approach will be taken to identify “core deposits” and any recurring trends or regular patterns in the accounts and then placed by appropriate time band.

- o) **TIME DEPOSITS** –will be placed by the appropriate maturity date in the customer’s file. If there is no clearly stated maturity date then Trend Analysis will be performed to both determine any regular core deposits and the actual placement of any remaining balance in the proper time band.
- p) **CERTIFICATES OF DEPOSIT** – will be placed exclusively by their residual maturity date.
- q) **DUE TO BANKS** – should be placed in the appropriate time band based on the residual maturity date for the accounts.
- r) **DUE TO NBU** - should be placed in the appropriate time band based on the residual maturity date for the accounts
- s) **ACCRUED INTEREST PAYABLE** - should be spread across the time bands based on their expected date of payment. Clearly these items need to link back to the specific customer account they represent and placed according to that maturity determination.
- t) **ACCOUNTS PAYABLE AND ACCRUALS** – since A/P do not maintain maturity date related information at this time it was agreed that under normal business practice these accounts would generally be paid within 30 days that the total would be divided by 30 and the first 25% would be placed in the 0 – 7 days time band and that the remaining 75% would be placed in the 8 – 31 Day time band.

- u) **INCOME TAXES** - current income taxes would be placed in the time band that coincides with their expected remittal date to the government taxing authority. Deferred taxes would be placed in the time band that relates to their expected payment date in the future.
- v) **STOCKHOLDER INVESTMENT PENDING REGISTRATION** – generally accounts of this type would have an expected forward date by which time their registration would be completed. They should be placed in the appropriate time band based on that expected future processing date.
- w) **SUBORDINATED DEBT** – should be placed in the > 365 Days time band unless there is a specified residual maturity date that would indicate placement in a shorter time band.
- x) **CAPITAL** – in all cases capital accounts are considered to have a maturity date > 365 Days. All capital accounts and general reserves should be placed in that time band.
- y) **OFF BALANCE SHEET ACCOUNTS** – currently insufficient information is maintained on off-balance sheet related customer account information. Due to the non-regular nature of such accounts and contingent liabilities no effort was made at this time to incorporate off-balance sheet activity in to the Maturity Gap report presentation. That is not to indicate however that such maturity date related information should not be collected. As part of the effort to update and improve data integrity in this area across the balance sheet all off-balance sheet accounts should also have reasonable maturity date information entered into the database.

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| Gap Maturity Report Line Item | Description of Line Item Components | Category or Groups of Synthetic Accounts | Original Criteria for Analysis and Reporting | Additional or Revised Criteria for Analysis and Reporting |
|-------------------------------|---|---|---|--|
| Asset Accounts | | | | |
| Currency and Bank Metals | Minimum and maximum currency levels to be calculated | 100, 101, 110 | 1) Minimum classified as >365. 2) Excess over minimum 0 - 7 3) Bank metals reported as >365. | Trend analysis of statistical data (analytical accounts) Ability to enter minimum reserve standards into the database |
| Due from NBU | 1) Cash on Demand accounts 2) Cash on term accounts | 1) 120; except 1208 2) 121; except 1218 | 1) Statutory reserve of 15% of Total Deposits is reported as > 365 2) Excess NBU balance reported in 0 – 7 days 3) Recorded based on residual maturity date | Automatic calculation of statutory reserve in Vicont DB |
| Due From Banks | 1) Cash in demand accounts 2) Cash in time Accounts 3) Cash in Guarantee accounts (Plastic Cards) | 1) 150; except 1508 and 1509 2) 151; except 1518 and 1519 3) 1511 | 1) recorded as 1 - 7 2) recorded based on residual maturity date 3) Spread based on: a) Maturity of guaranteed | Trend analysis of statistical data (analytical accounts) |

| Gap Maturity Report Line Item | Description of Line Item Components | Category or Groups of Synthetic Accounts | Original Criteria for Analysis and Reporting | Additional or Revised Criteria for Analysis and Reporting |
|-------------------------------|--|---|---|---|
| | 4) Non-classified Inter-bank Loans 5) Classified inter-bank loans 6) Loss Reserve(s) | 4) 4.152 (standard); except 1528, and 1529 5) 5.152 (watch, non-standard), 158; 1528,1529 not included 6) 159 | transaction b) Balances guaranteeing plastic card operations reported as >365 4) spread based on maturity 5) spread based on some estimate of recovery, for example: a) Watch, Maturity + 30 b) Substandard, Maturity + 90 c) Doubtful, Maturity + 180 d) Loss, ">365" 6) Spread based on: a) General : pro-rata against non-classified loans b) Specific: consistent with related loan balance | No need to shift the maturity date, reserve adjustment only is needed |
| Current Loans | 1. Current loans that will pay when due | 1. 20,21,22 (standard),except for 209, | 1. spread by maturity 2. Estimated renewal | Trend analysis of statistical data (analytical accounts) |

| Gap Maturity Report Line Item | Description of Line Item Components | Category or Groups of Synthetic Accounts | Original Criteria for Analysis and Reporting | Additional or Revised Criteria for Analysis and Reporting |
|--|--|--|---|---|
| OVDP/COVDP (Note: Liquidity, not intention of management relevant in measuring maturity gap) | 1. Marketable 2. Not marketable 3. Reserve against diminution in value | 14 3.149 | 1. "1-7" at market value 2. maturity date | |
| Other investments in debt and equity securities | 1. Marketable 2. Not marketable Reserve against diminution in value | 32 3.329 | 1. 1-7 at market value 2. maturity date less valuation reserve | |
| Investments in affiliated companies | | 41,42 | 1. ">365" | |
| Accrued Income Receivable | 1. Loans and deposits 2. COVDP and other securities | 1. 1208,1218,1508,1509,1518,1519,1528,1529,2008,2018,2028,2029,2038,2039,2048,2049,2058,2059,2068,2069,2078,2079,2108,2109,2118,2119,2208,2209,2218,2219 2. 1418,1428,1438,3108,3118,3119,3218,3219 | 1. Estimated payment date 2. Due date | Trend analysis of statistical data (analytical accounts) |

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| Gap Maturity Report Line Item | Description of Line Item Components | Category or Groups of Synthetic Accounts | Original Criteria for Analysis and Reporting | Additional or Revised Criteria for Analysis and Reporting |
|---------------------------------------|---|--|---|---|
| | 3. Other | 3. .357 | 3. Estimated payment date | |
| Misc. Receivables, etc | 1. Misc. Receivables 2. Clearing Accounts | 18,28,351,352,354,355,358,359 371 | 1. Estimated payment date 2. "1-7" | Trend analysis of statistical data (analytical accounts) Calculate A/R trends based on actual experience |
| All other assets | Pre-paids, low value items, fixed and intangible assets | 34,350,39 A,43,44 | Report ">365" unless material pending asset sale identified | Trend analysis of statistical data (analytical accounts) |
| Liability and Capital Accounts | | | | |
| Demand Deposits | 1. State Budget 2. Business 3. Individuals | 1. except for accrued interest and term deposit accounts 2. except for accrued interest accounts 3. 3.262 except for accrued | For each demand deposit category multiply lowest daily balance during last quarter by 90%. This is "core" deposit which will be reported ">365". Report amount over | Trend analysis of statistical data (analytical accounts) |

| Gap Maturity Report Line Item | Description of Line Item Components | Category or Groups of Synthetic Accounts | Original Criteria for Analysis and Reporting | Additional or Revised Criteria for Analysis and Reporting |
|-------------------------------|--|--|--|---|
| | | interest accounts | "core" deposit in "1-7" | |
| Time Deposits | <ol style="list-style-type: none"> 1. State Budget 2. Business 3. Individuals | <ol style="list-style-type: none"> 1. 25 (term deposits), except for accrued interest accounts 2. 261 except for accrued interest accounts 3. .263 except for accrued interest accounts | Same formula as Demand Deposits | |
| Certificates of Deposit | | 332, except for 3328 | Reported based on maturity | |
| Due to NBU | | 130, 131,132,133, except for accrued interest accounts | Loan Maturities | |
| Accrued Interest Payable | <ol style="list-style-type: none"> 1. Deposits 2. NBU 3. Subordinated debt | <ol style="list-style-type: none"> 1.1608,1618,1628,2608,2618,2628,2638 2.1308,1318,1328,1338 3.3668 | <ol style="list-style-type: none"> 1. Pro-rata on deposit balances 2. Period payment due | |
| Accounts Payable and accruals | <ol style="list-style-type: none"> 1. Accounts payable and accruals | <ol style="list-style-type: none"> 1. 19,290,360,361364,365,367,369, | <ol style="list-style-type: none"> 1. Estimated period payment due | |

| Gap Maturity Report Line Item | Description of Line Item Components | Category or Groups of Synthetic Accounts | Original Criteria for Analysis and Reporting | Additional or Revised Criteria for Analysis and Reporting |
|---|---|--|--|---|
| | 2. Clearing accounts 3. Other Liabilities | 2. 292,372,373, 3. 39L | 2. "1-7" 3. Estimated period payment due | |
| Income Taxes | 1. Current 2. Deferred | 362 | 1. "8-31" 2. ">365" | |
| Stockholder investment pending registration | | 363 | ">365" | |
| Subordinated debt | | 3660 | | |
| Capital | 1. Common Stock 2. Retained earnings and reserves 3. Treasury Stock | 5 Class | 1. ">365" 2. ">365" 3. "1-7" (if marketable) | |
| Off-Balance Sheet Accounts | | | | |
| Off Balance Sheet Accounts | 1. Group 90: Guarantees likely to be funded | | Estimate of period funds will be received or payment required. | |

| Gap Maturity Report Line Item | Description of Line Item Components | Category or Groups of Synthetic Accounts | Original Criteria for Analysis and Reporting | Additional or Revised Criteria for Analysis and Reporting |
|-------------------------------|--|--|--|---|
| | 2. Group 91: Claims under loans and deposits 3. Group 92: Claims under FX operations 4. Group 93: Claims under securities operations | | | |

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Aval Bank - Proposed Interim Interest Repricing Gap Report

Assets and Liabilities as at July 1, 2000 (000rph)

Separate report for each currency.

| COA Reference | Total | 0-7 Days | 8-31 Days | 32-92 Days | 93-183 Days | 184-365 days | >365 Days | Non sensitive |
|---|----------------------|--|-----------|------------|-------------|--------------|-----------|---------------|
| Assets | | | | | | | | |
| Currency and Bank Metals | 100,101,110 | Currency N/S Bank Metals S(0-7) | | | | | | |
| Due From NBU | 120,121 | Non Interest Bearing so all N/S | | | | | | |
| Due From Banks | 150,151,1511,152,159 | All S (as maturity report) | | | | | | |
| Current Loans | 20,21,22,24 | All S (as maturity report) | | | | | | |
| Classified Loans | 20,21,22,24 | All S (as maturity report) | | | | | | |
| Investments For Sale | 31,319 | All S (as maturity report) | | | | | | |
| Government Investments | 14,149 | All S (as maturity report) | | | | | | |
| Other Investments & Equity Securities | 32,329 | All S (as maturity report) | | | | | | |
| Investments in Affiliated Companies | 41,42 | All N/S | | | | | | |
| Accrued Income Receivable | numerous accounts | All N/S | | | | | | |
| Misc. Receivables | numerous accounts | All N/S | | | | | | |
| All Other Assets | numerous accounts | Mainly N/S (as maturity report) | | | | | | |
| Total Assets | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Liabilities | | | | | | | | |
| Demand Deposits | 25,260,262 | All S (as maturity report) | | | | | | |
| Time deposits | 25,261,263 | All S (as maturity report) | | | | | | |
| Certificates of Deposit | 332 | All S (as maturity report) | | | | | | |
| Due to Banks | 160,161,162 | All S (as maturity report) | | | | | | |
| Due to NBU | 130,131,132,133 | All S (as maturity report) | | | | | | |
| Accrued Interest Payable | numerous accounts | All N/S | | | | | | |
| Accounts Payable and Accruals | numerous accounts | All N/S | | | | | | |
| Income Taxes | 362 | All N/S | | | | | | |
| Subordinated Debt | 3660 | Mainly N/S (as maturity report) | | | | | | |
| All other Liabilities | | Mainly N/S (as maturity report) | | | | | | |
| Total Liabilities | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital | | | | | | | | |
| Stockholder Investment Pending Registrar | 363 | All N/S | | | | | | |
| Capital/Shareholder Equity | Class 5 | All N/S | | | | | | |
| Total Capital | | | | | | | | |
| Total Liabilities and Capital | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Off-Balance Sheet | | | | | | | | |
| Swaps (FX and Bank Metal Activities) | | IGNORE THIS LOT MEANTIME - as Maturity Report | | | | | | |
| (FX and Bank Metal Activities) | | May be S or N/S depending on nature | | | | | | |
| Guarantees, L/C, Acceptances - Given | | May be S or N/S depending on nature | | | | | | |
| Guarantees, L/C, Acceptances - Received | | May be S or N/S depending on nature | | | | | | |
| Total Off-Balance Sheet | | | | | | | | |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gap Position | | As Maturity Report | | | | | | |
| Gap/Total assets | | As Maturity Report | | | | | | |
| Interest Volatility | | This need not be built into the report but is a separate analysis of interest rates - it is expected change % interest for each bucket | | | | | | |
| Interest Volatility x Gap Position | | Input the volatility as a separate parameter, default value 1 | | | | | | |

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AVAL Bank
Recommendations and Data Requirements for Components of
Interest Repricing Gap Report: Based on Modified Maturity Gap Report
September 2000

1) General Structure:

- a) Period end balances to be used but these may be allocated to time bands not by maturity but on an estimated basis.
- b) Separate reports should be prepared for each major foreign currency and national currency (HRV and currency denominated assets and liabilities not HRV equivalent). Initially a separate report for National currency and hard currency (95% USD) will be sufficient.
- c) Sensitivity intervals or repricing intervals are: 0-7, 8-31, 32-92, 93-183, 184-365, >365, and Non-sensitive. (see specimen report) The most important end of the scale is the short end.
- d) The report will be based on the Maturity Gap Report. To create the Interest Repricing Report the Non-sensitive elements will be removed from each time band and allocated to the Non-sensitive time band. A few items having no maturity are will appear in every time band. These are mainly securities.
- e) The volatility of National currency (HRV) and hard currency (USD) interest rates will be determined separately.
- f) Generally any interest bearing asset or liability is sensitive. Any asset / liability is sensitive if its value changes when market rates change.
- g) As the report is based on book values rather than market values, accruals are all are treated as sensitive on the basis that the book value plus the accrual will give a closer approximation to market value which is the ideal for measuring interest risk.
- h) Similarly impaired assets should be excluded from the measurement if realistically they have a zero market value. Provisions and reserves are all treated as sensitive in order to bring the asset value closer to the ideal
- i) Securities (including Zero Coupon) are all sensitive and will appear in every time band.
- j) No additional database components are needed until a more accurate version of this report is created based on repricing dates rather than maturity.
- k) No additional data components are needed until the report is constructed on the basis of repricing date rather than maturity date.

Tracking Interest Rates.*

As a minimum Aval Bank must track the yield curve in the USD and HRV markets. (also any other major currency). This is necessary to estimate the likely changes (volatility) in interest rates for each of the time bands 0-7, 8-31, 32-92, 93-183, 184-365, >365. The rates should represent open market rates. USD LIBOR fixing for example can be obtained from Reuters or Internet.

The Exposure can be calculated from the gap multiplied by the most likely percentage change in the time band.

| Report Line Item | Components in Line | Groups of Accounts | Criteria for Reporting | Additional Data Base Components Needed |
|--|--|--------------------|--|---|
| Assets | | | | |
| Currency and Bank Metals | Cash, Travellers Cheques and Bank Metals | 100,101,110 | All non-sensitive (metals are sensitive but can be ignored if small) | |
| Due from NBU: | Funds with NBU Deposits with NBU, accruals, obligatory reserves | 120 – 121 | Non interest bearing accounts are non-sensitive. Interest bearing accounts are sensitive . Use maturity band. 1202,1203,1207 non-sensitive. | Software must differentiate between statutory (non interest bearing) and balance that may be interest bearing |
| Due from Banks | Correspondent accounts Demand deposits Time deposits Interbank Loans | 150 – 1591 | All sensitive Use maturity band. | |
| urrent loans and Classified Loans | Business Entities State Agencies Individuals Bad debt reserve | 200 - 2401 | All sensitive. Use maturity band. | |
| Investments for Sale | Equity Debt | 310 – 3119 | All sensitive. Will appear in all bands | Long Term: Value.Market value / fair value of securities where possible should be captured by the database |
| Government Investments | State Bonds for Sale Equity Securities for Sale Debt Securities for Sale | 140 – 1491 | All sensitive. Will appear in all bands | Long Term: Value.Market value / fair value of bonds where possible should be captured by the database |

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| Report Line Item | Components in Line | Groups of Accounts | Criteria for Reporting | Additional Data Base Components Needed |
|-------------------------------|--|---|---|--|
| Other Investments & Equity | | 321 - 3290 | All sensitive. Will appear in all bands | Long Term: Value. Market value / fair value of bonds where possible should be captured by the database |
| Investments in Affiliates | Affiliates / Subsidiaries. | 410- 4209 | All sensitive. Will appear in all bands | |
| Accrued Income Receivable | Numerous accounts | All accruals | All sensitive Use maturity band of asset | |
| Misc. Receivables | Misc. Receivables Clearing Accounts | All miscellaneous receivables | All non-sensitive | |
| All other assets | Prepayments, low value items, fixed and intangible assets | 340, 350, 390, 430, 440, | All non-sensitive | |
| Liabilities | | | | |
| Demand Deposits | | 250,260,262 | All sensitive. Use maturity band | |
| Time Deposits | State Budget Business Individuals Own Debt Securities | 250, 261, 263, 330 | All sensitive. Use maturity band | |
| Certificates of Deposit | | 332 | All sensitive. Use maturity band | |
| Due to Banks | Demand Time Interbank Loans | 160,161,162 | All sensitive. Use maturity band | |
| Due to NBU | Correspondent Account Loans Deposits | 130,131,132,133 | All sensitive Use maturity band | |
| Accrued Interest Payable | Deposits Budget NBU Subordinated debt | 1608, 1618, 1628, 2608, 2618, 2628, 2638 1308, 1318, 1328, 1338 3668 | All sensitive Use maturity band of liability | |
| Accounts Payable and Accruals | Accounts payable and Accruals Clearing accounts | Num 190, 290, 360, 361, 364, 365, 367, 369. 292, 372, 373 | Non-sensitive | |
| Other Liabilities | Other liabilities | 390 | Non-sensitive | |
| Income Taxes | Current / Deferred | 362 | Non-sensitive | |

Final IBTCI Specifications for Interest Rate/Repricing Gap Report – August thru September 2000

Exhibit C-2

| Report Line Item | Components in Line | Groups of Accounts | Criteria for Reporting | Additional Data Base Components Needed |
|---|---|--------------------|--|--|
| Subordinated Debt | | 3660 | All sensitive. Use maturity bands | |
| Capital | | | | |
| Stockholder investment pending registration | | 363 | All non-sensitive | |
| Capital | Common Stock Retained earnings and reserves Treasury Stock | Class 5 | All non-sensitive Treasury stock is sensitive will appear in every band. | |
| Off Balance Sheet Accounts | Group 90: Guarantees likely to be funded Group 91: Claims under loans and deposits Group 92: Claims under FX operations Group 93: Claims under securities operations | Class 9 | All non-sensitive at present but should be treated the same as the underlying asset / liability. | |

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Final IBTCI Specifications for Interest Rate/Repricing Gap Report – August thru September 2000
Interest Risk Repricing Gap Report (UAH, USD, DEM etc.)

| Line Item | TOTAL | Days | Days | Days | Days | Days | Days | Non-sensitive |
|--|-------|-------|--------|---------|----------|-----------|------|---------------|
| | | 0 - 7 | 8 - 31 | 32 - 92 | 93 - 183 | 184 - 365 | >365 | |
| Assets | | | | | | | | |
| Currency and Bank Metals | | | | | | | | |
| Due from NBU | | | | | | | | |
| Due From Banks | | | | | | | | |
| Current and Classified Loans | | | | | | | | |
| Investments for sale | | | | | | | | |
| Government investments | | | | | | | | |
| Other investments | | | | | | | | |
| Investments in affiliated companies | | | | | | | | |
| Accrued Income Receivable | | | | | | | | |
| Misc. Receivables, etc | | | | | | | | |
| All other assets | | | | | | | | |
| TOTAL ASSETS | | | | | | | | |
| Liabilities | | | | | | | | |
| Demand Deposits | | | | | | | | |
| Time Deposits | | | | | | | | |
| Certificates of Deposit | | | | | | | | |
| Due to Banks | | | | | | | | |
| Due to NBU | | | | | | | | |
| Accrued Interest Payable | | | | | | | | |
| Accounts Payable and accruals | | | | | | | | |
| Income Taxes | | | | | | | | |
| Stockholder investment pending | | | | | | | | |
| Subordinated debt | | | | | | | | |
| Capital Pending Registration | | | | | | | | |
| Capital | | | | | | | | |
| TOTAL LIABILITIES & CAPITAL | | | | | | | | |
| Off Balance Sheet Accounts | | | | | | | | |
| TOTAL | | | | | | | | |
| Interest GAP | | | | | | | | |
| Average Volatility % | | | | | | | | |
| Maximum Volatility % | | | | | | | | |
| POSURE | | | | | | | | |

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International Business & Technical Consultants, Inc.

U.S. Agency for International Development
 Financial Infrastructure Development Project

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 229-6525
 Fax: 380-44-246-4953

Date: April 2000
To: Nicolay V. Linder
Copy to: Anna A. Tarnavska
From: Olena Borko

Re: **AVAL Bank**
Recommendations and Data Requirements for Components of
Maturity Gap Report
April 2000

Please find attached the updated version of Asset and Liability Maturity Gap Report

1) General Structure:

- a) Period-end balances to be used not average balances
- b) Report should be segregated by foreign currency and National Currency
- c) Maturity intervals are: 1-7, 8-31, 32-92, 93-183, 184-365, and >365

| Report Line Item | Components in Line | Groups of Accounts | Criteria for Reporting | Additional Data Base Components Needed |
|--------------------------|--|--------------------|--|--|
| Assets | | | | |
| Currency and Bank Metals | Minimum and maximum currency levels to be calculated | 100,110 | 1. Minimum classified as "> 365". 2. Excess over minimum "1-7" 3. Bank metals reported as "> 365". | Ability to enter minimum reserve standards into the database |

Original IBTCI Specifications for Maturity Gap Report – April 2000

Exhibit D

| Report Line Item | Components in Line | Groups of Accounts | Criteria for Reporting | Additional Data Base Components Needed |
|------------------|---|---|--|---|
| NBU account: | 1. Cash on demand accounts 2. Cash on term accounts | 1.120; 1208 is not included 2.12; 1218 is not included | 1. statutory reserve reported as "> 365" 2. Excess NBU balance reported in "1-7" Recorded based on maturity | Automatic calculation of statutory reserve in Vicont DB |
| Due From Banks | 1. Cash in demand accounts 2. Cash in time Accounts 3. Cash in Guarantee accounts 4. Non-classified Interbank Loans 5. Classified interbank loans 6. Loss Reserve(s) | 1.150; 1508,1509 are not included 2.151; 1518, 1519 are not included 3.1511 4.152 (standard); 1528,1529 not included 5.152 (watch, non-standard), 158; 1528,1529 not included 6.159 | 1) recorded as "1-7" 2) recorded based on maturity 3) Spread based on: a) Maturity of guaranteed transaction b) Balances guaranteeing plastic card operations reported as "> 365". 4) spread based on maturity 5) spread based on some estimate of recovery, for example: a) Watch, Maturity + 30 b) Substandard, Maturity + 90 c) Doubtful, Maturity + 180 d) Loss, ">365" 6) Spread based on: a) General : pro-rata against non-classified loans Specific: consistent with related loan balance | No need to shift the maturity date, reserve adjustment only is needed |
| Current Loans | 1. Current loans that will | 20,21,22 (standard), except for 209, | 1. spread by maturity | |

Original IBTCI Specifications for Maturity Gap Report – April 2000

| | | | | |
|--|--|--|---|---|
| | pay when due 2. Current loans that will likely be extended 3. General Reserve | 219, 229 and accrued interest accounts 3.2401 | 2. Estimated renewal maturity 3. Spread in relation to current loan balances | |
| Classified Loans | 1) Loan Balance 2) Loss Reserve | 20,21,22 (watch, non-standard, doubtful 209,219,229), except for accrued interest accounts 2.2400 | 1) spread based on estimate of recovery: a) Watch, Maturity + 30 b) Substandard, Maturity + 90 c) Doubtful, Maturity + 180 d) Loss, ">365" 2) Consistent with related loan balance | No need to shift the maturity date, reserve adjustment only is needed |
| Investments for sale | 1. Equity 2. Vexels 3. Promissory notes (except for OVDP, COVDP) 4. Reserve against diminution in value | 31 4.319 | classify as "1-7" | |
| OVDP/COVDP (Note: Liquidity, not intention of management relevant in measuring maturity gap) | 1. Marketable 2. Not marketable 3. Reserve against diminution in value | 14 3.149 | 1. "1-7" at market value 2. maturity date | |
| Investments in affiliated companies | | 41,42 | 1. ">365" | |
| Accrued Income Receivable | 1. Loans and deposits 2. COVDP and other securities | 1.1208,1218,1508,1509,1518,1519,1528,1529,2008,2018,2028,2029,2038,2039, 2048,2049,2058,2059,2068,2069, 2078, 2079,2108,2109,2118,2119,2208,2209, 2218,2219 2.1418,1428,1438,3108,3118,3119,3218,3219 | 1. Estimated payment date 2. Due date | |

Original IBTCI Specifications for Maturity Gap Report – April 2000

Exhibit D

| | | | | |
|--------------------------------|--|--|---|--|
| | 3. Other | 3.357 | 3. Estimated payment date | |
| Misc. Receivables, etc | 1. Misc. Receivables 2. Clearing Accounts | 18,28,351,352,354,355,358,359 371 | 1. Estimated payment date 2. "1-7" | |
| All other assets | Prepays, low value items, fixed and intangible assets | 34,350,39 A,43,44 | Report ">365" unless material pending asset sale identified | |
| Liabilities and Capital | | | | |
| Demand Deposits | 1. State Budget 2. Business 3. Individuals | 1.25 except for accrued interest and term deposit accounts 2.260 except for accrued interest accounts 3.262 except for accrued interest accounts | For each demand deposit category multiply lowest daily balance during last quarter by 90%. This is "core" deposit which will be reported ">365". Report amount over "core" deposit in "1-7" | |
| Time Deposits | 1. State Budget 2. Business 3. Individuals | 1. 25 (term deposits), except for accrued interest accounts 2. 261 except for accrued interest accounts 3. 263 except for accrued interest accounts | Same formula as Demand Deposits | |
| Certificates of Deposit | | 332, except for 3328 | Reported based on maturity | |
| Due to NBU | | 130, 131,132,133, except for accrued interest accounts | Loan Maturities | |

Original IBTCI Specifications for Maturity Gap Report – April 2000

Exhibit D

| | | | | |
|---|---|--|--|--|
| Accrued Interest Payable | <ol style="list-style-type: none"> 1. Deposits 2. NBU 3. Subordinated debt | <p>1.1608,1618,1628,2608,2618,2628,2638</p> <p>2.1308,1318,1328,1338</p> <p>3.3668</p> | <ol style="list-style-type: none"> 1. Pro-rata on deposit balances 2. Period payment due | |
| Accounts Payable and accruals | <ol style="list-style-type: none"> 1. Accounts payable and accruals 2. Clearing accounts 3. Other Liabilities | <p>1.19,290,360,361364,365,367,369,</p> <p>2.292,372,373,</p> <p>3.39L</p> | <ol style="list-style-type: none"> 1. Estimated period payment due 2. "1-7" 3. Estimated period payment due | |
| Income Taxes | <ol style="list-style-type: none"> 1. Current 2. Deferred | <p>362</p> | <ol style="list-style-type: none"> 1. "8-31" 2. ">365" | |
| Stockholder investment pending registration | | <p>363</p> | <p>">365"</p> | |
| Subordinated debt | | <p>3660</p> | | |
| Off Balance Sheet Accounts | <ol style="list-style-type: none"> 1. Group 90: Guarantees likely to be funded 2. Group 91: Claims under loans and deposits 3. Group 92: Claims under FX operations 4. Group 93: Claims under securities operations | | <p>Estimate of period funds will be received or payment required.</p> | |

International Business and Technical Consultants, Inc.

United States Agency for International Development

Ukrainian Bank Accounting and Operations Infrastructure Development Project

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(380-44) 229-6525
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Дата 15 августа 2000 года
Кому Линдеру Николаю Викторовичу
Копия Тарнавской А.А.
От Елены Борко
Тема Рекомендации и требования к компонентам Отчета о разрыве между сроками погашения

General Structure:

- a) Period-end balances to be used not average balances
- b) Report should be segregated by foreign currency and National Currency
- c) Maturity intervals are: 1-7, 8-31, 32-92, 93-183, 184-365, and >365

Note: Aval Additions to April Memo are highlighted below.

| Report Line Item | Components in Line | Groups of Accounts | Criteria for Reporting | Additional Data Base Components Needed |
|--------------------------|--|--|---|--|
| Assets | | | | |
| Currency and Bank Metals | Minimum and maximum currency levels to be calculated | 100,110 | <ol style="list-style-type: none"> 1. Minimum classified as "> 365". 2. Excess over minimum "1-7" 3. Bank metals reported as "> 365". | Ability to enter minimum reserve standards into the database Statistical Data |
| NBU account: | <ol style="list-style-type: none"> 1. Cash on demand accounts 2. Cash on term accounts | <p>1.120; 1208 is not included</p> <p>2.12; 1218 is not included</p> | <ol style="list-style-type: none"> 1. statutory reserve reported as "> 365" 2. Excess NBU balance reported in "1-7" Recorded based on maturity | Automatic calculation of statutory reserve in Vicont DB |

| Report Line Item | Components in Line | Groups of Accounts | Criteria for Reporting | Additional Data Base Components Needed |
|------------------|---|--|--|--|
| Due From Banks | <ol style="list-style-type: none"> 1. Cash in demand accounts 2. Cash in time Accounts 3. Cash in Guarantee accounts 4. Non-classified Interbank Loans 5. Classified interbank loans 6. Loss Reserve(s) | <p>1.150; 1508,1509 are not included</p> <p>2.151; 1518, 1519 are not included</p> <p>3.1511</p> <p>4.152 (standard); 1528,1529 not included</p> <p>5.152 (watch, substandard, doubtful, loss), 158; 1528,1529 not included</p> <p>6.159</p> | <ol style="list-style-type: none"> 1) recorded as "1-7" 2) recorded based on maturity 3) Spread based on: <ol style="list-style-type: none"> a) Maturity of guaranteed transaction b) Balances guaranteeing plastic card operations reported as "> 365". 4) spread based on maturity 5) spread based on some estimate of recovery, for example: <ol style="list-style-type: none"> a) Watch, Maturity + 30 b) Substandard, Maturity + 90 c) Doubtful, Maturity + 180 d) Loss, ">365" 6) Spread based on: <ol style="list-style-type: none"> a) General : pro-rata against non-classified loans Specific: consistent with related loan balance | <p>Statistical Data</p> <p>No need to shift the maturity date, reserve adjustment only is needed</p> |
| Current Loans | <ol style="list-style-type: none"> 1. Current loans that will pay when due 2. Current loans that will likely be extended | <p>20,21,22 (standard), except for 209, 219, 229 and accrued interest accounts</p> | <ol style="list-style-type: none"> 1. spread by maturity 2. Estimated renewal maturity | <p>Statistical Data</p> |

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| | | | | |
|--|--|---|---|------------------|
| | 3. General Reserve | 3.2401 | 3. Spread in relation to current loan balances | |
| Classified Loans | 1) Loan Balance | 20,21,22 (watch, substandard, doubtful, loss 209,219,229), except for accrued interest accounts | 1) spread based on estimate of recovery: a) Watch, Maturity + 30 b) Substandard, Maturity + 90 c) Doubtful, Maturity + 180 d) Loss, ">365" 2) Consistent with related loan balance | Statistical Data |
| | 2) Loss Reserve | 2.2400 | | |
| Investments for sale | 1. Equity 2. Vexels 3. Promissory notes (except for OVDP, COVDP) | 31 | classify as "1-7" | |
| | 4. Reserve against diminution in value | 4.319 | | |
| OVDP/COVDP (Note: Liquidity, not intention of management relevant in measuring maturity gap) | 1. Marketable | 14 | 1. "1-7" at market value 2. maturity date | |
| | 2. Not marketable Reserve against diminution in value | 3.149 | | |
| Investments in affiliated companies | | 41,42 | 1. ">365" | Statistical Data |
| Accrued Income Receivable | 1. Loans and deposits | 1.1208,1218,1508,1509,1518,1519,1528,1529,2008,2018,2028,2029,2038,2039, 2048,2049,2058,2059,2068, 2069, 2078, 2079,2108,2109,2118, 2119,2208,2209, 2218,2219 | 1. Estimated payment date | Statistical Data |

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| | | | | |
|--------------------------------|---|---|---|--|
| | 2. COVDP and other securities 3. Other | 2.1418,1428,1438,3108,3118,3119,3218,3219 3.357 | 2. Due date 3. Estimated payment date | |
| Misc. Receivables, etc | 1. Misc. Receivables 2. Clearing Accounts | 18,28,351,352,354,355,358,359371 | 1. Estimated payment date 2. "1-7" | |
| All other assets | Prepays, low value items, fixed and intangible assets | 34,350,39 A,43,44 | Report ">365" unless material pending asset sale identified | Statistical Data |
| Liabilities and Capital | | | | |
| Demand Deposits | 1. State Budget 2. Business 3. Individuals | 1.25 except for accrued interest and term deposit accounts 2.260 except for accrued interest accounts 3.262 except for accrued interest accounts | For each demand deposit category multiply lowest daily balance during last quarter by 90%. This is "core" deposit which will be reported ">365". Report amount over "core" deposit in "1-7" | 3 Statistical Data by system customers |
| Time Deposits | 1. State Budget 2. Business 3. Individuals | 1. 25 (term deposits), except for accrued interest accounts 2. 261 except for accrued interest accounts 3. 263 except for accrued interest accounts | Same formula as Demand Deposits | |
| Own Debt Securities | | 330, except for 3308 | Reported based on maturity | |
| Certificates of Deposit | | 332, except for 3328 | Reported based on maturity | |
| Due to NBU | | 130, 131,132,133, except for accrued interest accounts | Loan Maturities | |

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| | | | | |
|---|---|--|--|--|
| Accrued Interest Payable | <ol style="list-style-type: none"> 1. Deposits 2. NBU 3. Subordinated debt 4. Budget | <ol style="list-style-type: none"> 1. 1608,1618,1628,2608,2618,2628,2638 2. 1308,1318,1328,1338 3. 3308,3328,3668 4. 2518,2528,2538,2548,2558,2568 | <ol style="list-style-type: none"> 1. Pro-rata on deposit balances 2-4 Период оплаты | |
| Accounts Payable and accruals | <ol style="list-style-type: none"> 1. Accounts payable and accruals 2. Clearing accounts 3. Other Liabilities | <ol style="list-style-type: none"> 1. 19,290,360,361364,365,367,369, 2. 292,372,373, 3. 39L | <ol style="list-style-type: none"> 1. Estimated period payment due 2. "1-7" 3. Estimated period payment due | |
| Income Taxes | <ol style="list-style-type: none"> 1. Current 2. Deferred | 362 | <ol style="list-style-type: none"> 1. "8-31" 2. ">365" | |
| Stockholder investment pending registration | | 363 | ">365" | |
| Subordinated debt | | 3660 | | |
| Capital | <ol style="list-style-type: none"> 1. Common Stock 2. Retained earnings and reserves 3. Treasury Stock | 1 Class | <ol style="list-style-type: none"> 1. ">365" 2. ">365" 3. "1-7" (if marketable) | |
| Off Balance Sheet Accounts | <ol style="list-style-type: none"> 1. Group 90: Guarantees likely to be funded 2. Group 91: Claims under loans and deposits 3. Group 92: Claims under FX operations 4. Group 93: Claims under securities operations | | Estimate of period funds will be received or payment required. | |

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Trend Analysis Plan

1. Objective

The objective is to determine matching of maturities by currency groups with the following positions being covered:

Assets:

- Cash (groups 100, 101, 110);
- Correspondent account with the NBU (gr. 120);
- Classified inter-bank loans (gr.152);
- Classified loans to businesses (section 20, 21);
- Classified loans to individuals (section 22);
- Accrued accounts receivable (interest accrued but not overdue);
- Other receivables (section 18, 28; gr. 351, 352, 354, 355, 358, 371);
- Other assets (section 34; gr. 350).

Liabilities:

- Demand deposits, including:
 - Budget accounts (section 25);
 - Business entities (gr. 260);
 - Individuals (gr. 262).

2. The method applied

- 2.1 Period under review – 2,5 years (1.01.1998 – 31.06.2000)
- 2.2 Input statistical data
- Dynamic series of balances and turnovers on the accounts that make part of asset and liability sections and group indicated above;
 - Planned (contractual) versus actual maturity for all classified loans.
- 2.3. Calculation parameters
- Asset and liability turnover period, broken down by sections and groups stated above:

$$\text{Turnover period} = \frac{\text{Daily average account balances}}{\text{Daily average turnover on the account}}$$

- Shift in maturity of loans classified:

$$\Delta T_k = \frac{\sum_k A_k \cdot (T_k^F - T_k^P)}{\sum_k A_k}$$

T_k^F - actual payment date;
 T_k^P - planned payment date;
 A_k - loan amount.

- Remaining balance on the account:

$$A_t = A_t^t \cdot \frac{\min_t \{A_t^t\}}{\sum A_t^t} \cdot T$$

T - sample period;
 A_t^t - balance on the account at the t-moment.

2.4. Allocation of asset and liability groups by maturities:"

2.4.1. Cash, receivables, demand deposit:

- Remaining balance is accounted for within the period over T- number of days;
- The difference between the current balance on the account and the remaining balance is accounted for within the period applicable to the turnover period.

2.4.2. Classified loans

- Current balances within each time period are reduced by the amount of mandatory insurance reserve;
- The time period to account for funds within mandatory insurance reserve amount is moved in relation to planned by ΔT_k shift value.

2.4.3. Interest accrued on loans

- Remaining balance is paid within the period over T- number of days;
- The difference between the current balance on the accrued interest account and the remaining balance is accounted for taking into consideration the shift in relation to planned by ΔT_k shift value.

2.4.4. Correspondent account at the NBU:

- Mandatory reserve, which is calculated based on the standard for provisioning against major deposits, is accounted for within the period over 365 days.
- Excess of balance on the account at the NBU - within the period from 1 to 7 days.

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ALCO QUESTIONS FOR AVAL

ALCO Committee Structure

- Has the written Charter or Mission Statement for the committee changed since we received a copy last year? If yes, how?
- Who are the actual members of the ALCO Committee?
- Who maintains the permanent minutes of ALCO? Can I see them? How soon?
- How does N. Linder's and A. Tarnavsk's Sections support this structure?
- What other Sections have involvement in supporting ALCO?
- What reports or MIS did they use at this/these meetings? If any?

Background of AVAL Gap Maturity Report

- Is there a process in place currently to report Maturity Gap information?
- Has the bank tried to develop a customized Maturity Gap reporting process previously?
- What were the results of that effort?
- How does the ALCO Department intend to use the new report once it is developed?

Current GAP Maturity and Interest/Repricing Report(s) Project

- Will the GAP Maturity Report extract be from Vicont DB?
- We need to be sure all inter-branch activities are netted out of our reports.
- What is relative level of data integrity of information currently maintained in the bank's production DBs? We know that off-Balance sheet analytical information is currently inadequate (lacking) but are there any other areas where we know or suspect the DB is lacking or the integrity is in question?



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To: Aval ALCO Committee Members
From: Richard M Stitcher - IBTCI Consultant in Kiev, Ukraine
Date: September 20, 2000
Re: Maturity Gap and Interest Rate/Repricing Gap Reports

As many of the ALCO members are aware IBTCI consultants have been working closely with members of the Aval Finance and Accounting Department staff over the past few months. Jointly we are developing new MIS reports that will benefit ALCO in its monitoring, measurement, and management of Liquidity and Interest Rate Risk exposure within the bank.

Two reports are currently in development and testing, and although not fully operational in a production mode, are available for demonstration and discussion as an ALCO tool for the more effective management these risks. They are the:

- *Maturity Gap Report* is in a draft stage that should be finalized over the next few days with the management of the Asset Liability Administration section and the Methodology and Reporting section. This report is designed to be a production MIS report available to ALCO from the Vicont database on any frequency of reporting requested by the committee. This report can be developed from existing Aval customer and account information.
- *Interest Rate/Repricing Gap Report* is also under development and testing and should be available to the committee by mid October. This is only a temporary or interim report that should be replaced with a more comprehensive version at a later date. By modeling this report on the Maturity Gap Report with a focus on the bank's interest sensitive and non-sensitive account information it will provide some direction to ALCO going forward. However, to be a much more useful tool it will be necessary for the IT staff to add interest rate based repricing fields to the current database and then populate these new field(s) fully with customer data. Currently repricing date information is not maintained by Aval.

The combination of these reports will provide ALCO with ongoing and current information from the bank's production IT data bases that up to this point has not been available to them. Three members of the current IBTCI permanent and short-term staff would like the opportunity to have a short meeting (less than 1 hour) to present and discuss these new MIS reports with ALCO. If we could be given time at ALCO's next scheduled meeting (10:00 on 28-09-00) it would be appreciated. The stay for one of the IBTCI short-term consultants has been extended one week in order to accommodate the new revised ALCO meeting now scheduled for 28-09-00 at 10:00. He is currently scheduled to depart from Kyiv on 29-09-00.

It has been a distinct pleasure to have the chance to work closely with the skilled professionals from the bank's Finance and Accounting ALCO support staff. Over these past several weeks they have put forth a significant work effort to bring this project to a successful closure. We at IBTCI would very much like to recognize and acknowledge them for their hard work, professionalism, and dedication to the advancement of Aval's broader strategic goals.

| ORGANIZATION | NAME | POSITION |
|-------------------|--|---|
| ALVA BANK | O.V. Derkach | Chairman (ALCO) |
| | I.V.Voloshko | First Deputy Chairman (ALCO) |
| | G.P. Shelud'ko | Deputy Chairman - Security and Legal (ALCO) |
| | Y.V.Simoliy | Deputy Chairman - Information Technology and HQ Back Office |
| | I. S. Slobodskoy | Deputy Chairman Non-Trading Operations and Plastic Cards (ALCO) |
| | S.N. Vovchenko | Deputy Chairman, Credit Department (ALCO) |
| | Edward Rosenblat | Manager - Finance Department (ALCO) |
| | Marina Kurilets | Treasurer |
| | Nikolay Linder | Manager - Asset and Liability Administration |
| | Anna Tarnavka | Manager - Methodology and Reporting |
| | Alla Khudoba | Manager, Payment Planning and Coordination |
| | Andrey Smilyanets | Manager, Information Technology |
| | Taras Tyshchenko | Senior Economist - Asset and Liability Administration |
| Oleksandr Hohchuk | Senior Analyst - Methodology and Reporting | |
| USAID - Kyiv | Boris von Hoffmann | Senior Bank Advisor, USAID |
| IBTCI - Kyiv | Gary P. Fechtmeyer | Team Leader - Kyiv Accounting Reform and Infrastructure Project |
| | Bruce A. Johnston | Information Technology Advisor |
| | Glyn Phillips | Resident Advisor - Accounting |
| | Jeanne Wehlau | Resident advisor - Audit |
| | Olena Boroko | Local Hire - Accountant |
| | James R. Hamilton | Short Term Advisor - Audit |
| | Michael R. Sprague | Short Term Advisor - Operations and IT |
| | | |
| | | |

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Ukrainian Bank Accounting and Operations Infrastructure Development Project

Aval Bank/IBTCI Work Plan for Maturity Gap Reporting Project

| Phase/Step | Activity | Aval | IBTCI | Proj. Week |
|--------------------------------------|--|--------------------|--------|--------------------------------------|
| Phase 1- Maturity Gap Report | | | | |
| Step 1 | Gain background, history, understanding of project | | RMS | 1 st and 2 nd |
| Step 2 | Develop project plan | | RMS | 2 nd |
| Step 3 | Obtain approval for plan | NL | GF | 2 nd |
| Step 4 | Identify and Define all necessary data elements for MS Excel Download/Template(s) - Assets/Liabilities/Off Balance Sheet (including Gap Report, Aval Trend Analysis request, Interest rate sensitivity input) | NL | RMS/GP | 2 nd thru 4 th |
| Step 5 | Design/Develop MS Excel Template/Report Formats Develop Calculation and Formulas | NL, Oles, AOH | RMS/GP | 4 th thru 6 th |
| Step 6 | Develop and Test Download/Bridge program for Aval Data Base to populate MS Excel template(s) | NL, Oles, AOH | RMS/GP | 4 th thru 6 th |
| Step 7 | Populate MS Excel templates with "live" data | NL, Oles, AOH | | 6 th thru 7 th |
| Step 8 | Test MS Excel Spreadsheet and Maturity Gap Report for accuracy and functionality | NL | RMS/GP | 7 th and 8 th |
| Step 9 | Present to Management | NL, MMK | RMS/GF | 8th |
| Phase 2 – Aval Trend Analysis | | | | |
| Step 10 | Identify - See Steps 1- 4 above. Occurs concurrently | NL, Oles | RMS/GP | 1 st thru 4 th |
| Step 11 | Design - As time permits in conjunction with Step 5 above | TBD | TBD | 4 th thru 8 th |
| Step 12 | Develop – As time permits in conjunction with Step 6 above | TBD | TBD | 4 th thru 8 th |
| Step 13 | Populate - As time permits in conjunction with Step 7 above | TBD | TBD | 6 th thru 8 th |
| Step 14 | Test - MS Excel Spreadsheet and Trend Analysis Report(s) for accuracy and functionality | TBD | TBD | 7 th and 8 th |
| Step 15 | Present – If completed include with above presentation | NL, Oles, AOH, GAT | RMS/GF | 8 th |

Note : TBD – Degree of activity during Phase 1 of project is still under discussion and To Be Determined

International Business and Technical Consultants, Inc.

U.S. Agency for International Development
 Ukrainian Bank Accounting and Operations Infrastructure Development Project

Aval Bank/IBTCI Work Plan for Maturity Gap Reporting Project
 (Continued)

| | | | | |
|---|--|----------|---------------------|--------------------------------------|
| Phase 3 – Interest Rate Sensitivity Report | | | | |
| Step 16 | Identify - See Steps 1- 4 above. Occurs concurrently Design - As time permits in conjunction with Step 5 above Develop – As time permits in conjunction with Step 6 above Populate - As time permits in conjunction with Step 7 above Test - MS Excel Spreadsheet Interest Rate Sensitivity Report(s) for accuracy and functionality Present – If completed include with above presentation | NL, Oles | RMS/GP | 1 st thru 4 th |
| Step 17 | | TBD | TBD | 4 th thru 8 th |
| Step 18 | | TBD | TBD | 4 th thru 8 th |
| Step 19 | | TBD | TBD | 6 th thru 8 th |
| Step 20 | | TBD | TBD | 7 th and 8 th |
| Step 21 | | | NL, MMK AOH, GAT | GP/GF |

Participants:

IBTCI

RMS – Richard M Stitcher
 GP - Glyn Phillips
 GF – Gary Fechtmeyer

Aval Bank

NL - Nicholai Linder -Asset Liability Mngement Section - Head
 MMK - Marina Kurilets -Treasury Dept. - Treasurer
 AOH - Alla O Hudaba -Payments Planning Coordination
 OH - Oles Homchuk. -Methodolgy and Reporting Section – IT Specialist
 GAT - Anna Tarnavaska (a) -Methodolgy and Reporting Section - Head
 AD - Andriy Dzubativ (b) -IT Department – Vice Chief

- (a) Not at meetings but will be involved in process on return from vacation.
- (b) Will probably not require IT Dept Resources to complete Phase 1 of project if Vicont Extract/Download is both complete and sufficient as to level of detail required.

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REFERENCE MATERIALS PROVIDED TO AVAL BANK

1. Maturity Gap Report MS Excel Report Template
 - (Includes hardcopy and a softcopy (disk Excel File))

3. Interest Rate/Repricing Gap Maturity MS Excel Report Template
 - (Includes hardcopy and a softcopy (disk Excel File))

3. Interest Rate Risk Handbook – Liquidity and Funds Management Guidance
 - June 1997 – Office of the Comptroller of the Currency (OCC)
 - (Includes both soft copy (disk PDF File) and 3 hardcopy Handbooks)

4. Interest Rate Risk Management Policy
 - May 1999 - from similar sized USA savings bank
 - (Hardcopy only)

5. Asset and Liability Management Policy
 - July 1988 – Investment Banking Division of Regional USA Commercial Bank
 - (Hardcopy only)

6. Interest Rate Risk Presentation – Gap Reports (from OCC)
 - From an Intermediate Funds Management School including:
 - o Instructor Notes,
 - o Overhead Slides, and
 - o Presentation Handouts
 - (Hardcopy only)