Assessment Report on the State of Automation of the Business Permits and Licensing Systems (BPLS) in the INVEST Partner Cities

Investment Enabling Environment (INVEST) Project

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TABLE OF CONTENTS

List of Acronyms……..... iii

I. Introduction…… 1
A. Objectives, Scope, and Limitations of the Study…….. 1
B. Caveats……. 2
II. Automating BPLS in Batangas City…..…….. 3
A. State of BPLS Automation……. 3
B. Recommendations for the Automation of the BPLS in the City……... 6
C. Proposed BPLS Automation Timeline……. 15
D. Introduction of New Policies…….. 15
III. Automating BPLS in Iloilo City…….…….. 16
A. State of BPLS Automation …… 16
B. Recommendations for the Automation of the BPLS in the City……... 20
C. Proposed BPLS Automation Timeline ……..... 26
D. Introduction of New Policies…….. 26
IV. Automating BPLS in Cagayan de Oro City….…… 27
A. State of BPLS Automation……. 27
B. Recommendations for the Automation of the BPLS in the City…….. 31
C. Proposed BPLS Automation Timeline……. 36
D. Introduction of New Policies…….. 37
V. Online Business Permits and Licensing System.....……. 38
A. Background…….. 38
B. Online BPLS for New Applicants…….. 38
C. Online BPLS for Renewal of Permits…….. 44
D. Requirements of Online BPLS…….. 45
E. Policy Changes…… 47

List of Figures

Figure 1. Business Permits and Licensing System in Batangas City…… 5
Figure 2. Options for BPLS Automation Consistent with JMC Standards…… 7
Figure 3. Philippine Business Registry Systems Architecture ……... 8
Figure 4. BPLS Application System Flow Design……. 11
Figure 5. BPLS Hardware and Network Systems Architecture……. 14
Figure 6. Business Permits and Licensing System in Iloilo City……. 19
Figure 7. Business Permits and Licensing System of Cagayan de Oro City……..... 29
Figure 8. Enhanced PBR Systems Architecture……... 40
Figure 9. Illustrative Activities of a Business Registrant in an Online Registration System... 43
Figure 10. Illustrative Online Activities of a Business Registrant Renewing a Business Permit……. 45
Figure 11. BPLS Application Systems Flow Diagram…… 46
Figure 12. BPLS Hardware and Network Systems Architecture…….. 47

LIST OF ACRONYMS

BFP	Bureau of Fire Protection
BIR	Bureau of Internal Revenue
BOSS	Business One-Stop Shop
BPLO	Business Permits and Licensing Office
BPLS	Business Permit and Licensing System
BTEP	Business Tax Enhancement Program
CAO	City Assessment Office
CDA	Cooperatives Development Authority
CDO	Cagayan de Oro
CENRO	City Environment and Natural Resources Office
CEO	City Engineer's Office
CHO	City Health Office
CIP-TWG	City INVEST Project Technical Working Group
CMS	Collection Management System
CPDC	City Planning and Development Coordinator
CPDO	City Planning and Development Office
CTO	City Treasurer's Office
DB	Data Base
DILG	Department of the Interior and Local Government
DTI	Department of Trade and Industry
EFT	Electronic Fund Transfer
e-NGAS	Electronic New Government Accounting System
FSIC	Fire Safety Inspection Certificate
GIS	Geographical Information System
HDMF	Home Development Mutual Fund
HP	Hewlett Packard
IFC	International Finance Corporation
INVEST	Investment Enabling Environment Project
ISO	International Organization of Standards
ISSP	Information Systems Strategic Plan
IT	Information Technology
ITD	Information Technology Division
JMC	DTI-DILG Joint Memorandum Circular No. 1, series of 2010
LAN	Local Area Network
LCE	Local Chief Executive
LGU	Local Government Unit
LINC-EG	Local Implementation of National Competitiveness for Economic Growth
MBPS	Mega Bytes per Second
NCC	National Computer Center
NERBAC	National Economic Research and Business Assistance Center
NGA	National Government Agency
OBO	Office of the Building Official
OR	Official Receipt
OS	Operating System
PBR	Philippine Business Registry
PBN	Philippine Business Number
PEZA	Philippine Economic Zone Authority

PHILHEALTH	Philippine Health Insurance Corporation
PLD	Permits and License Division
RPT	Real Property Tax
SEC	Security and Exchange Commission
SSS	Social Security System
TOP	Tax Order of Payment
TDW	Tax Due Worksheet
TWG	Technical Working Group
UI	User Interface
USAID	United States Agency for International Development
WAN	Wide Area Network
ZD	Zoning Division

I.
INTRODUCTION

The Investment Enabling Environment Project (INVEST) is a United States Agency for International Development (USAID)-supported two-year project that aims to assist the Philippine government to: (a) lower the transaction costs in doing business involving local level regulations and processes in business permit and licensing systems, and (b) increase the flow of private investments and the number of business start-ups in the Philippines. INVEST views the first objective as one of the key pre-conditions to the second one.

In January 16 to 20, 2012, INVEST assessed the business permit renewal processes and the Business One Stop Shops (BOSS) of its partner cities, namely Batangas, Iloilo, and Cagayan de Oro. This was part of the diagnostic phase of the Project and represents the first phase of its city-level engagement. Closely following this assessment was the examination of the processes for new business applications and the inspection system. The results of the two sets of assessment were presented in the Self-Assessment Workshop undertaken by the cities in June-July, 2012 to further streamline the current Business Permits and Licensing System (BPLS) in the cities given the results of the diagnostics carried out as well as the good BPLS practices witnessed during the local study tour participated in by the cities' delegations.

The study which is the object of this report covers the third phase of the diagnostics which assessed the state of automation undertaken in the INVEST partner cities. The review was undertaken on February- April 2012.[1] The preliminary findings were presented to the city government during the first meeting of the City INVEST Project-Technical Working Groups on the following dates: (1) April 19, 2012 for Iloilo City; (2) April 27, 2012 for Batangas City; and (3) May 2, 2012 for Cagayan de Oro City (CDO).

The report has four sections. Following the introduction are the three individual city reports which covers: (1) the state of automation of BPLS in the cities, including the system environment; (2) the recommendations for automation covering possible levels of automation and proposed phases for the automation process; (3) the timeline for implementation of the reconfigured automated BPLS; and (4) proposed direction of policy changes that may have to be undertaken by the cities. The last chapter of the report covers the possible requirements for online registration, something that the project is interested in exploring with the cities.

A. Objectives, Scope and Limitations of the Study

The Department of Trade and Industry (DTI) and the Department of the Interior and Local Government (DILG) jointly issued a Joint Memorandum Circular (JMC) that sets a standard of five steps for processing new business applications and business renewals and five and ten days for processing renewals and new applications, respectively. The INVEST project aims to ensure that its partner cities comply with these standards at the minimum and to exceed these to the extent possible. The latter, however, will only be possible with automation. Hence, the objective of the study is to describe and assess the current process of automation of registration-related services provided by the three partner cities of INVEST. The assessment will include the verification of the existence of an automated BPLS in the cities, the systems

[1]The assessment of BPLS automation was undertaken by Ms. Fe Ferriols in the three INVEST partner cities.

environment, as well as the Information Technology (IT) staff that manages the automated system. From the assessment, the study is then expected to recommend options for BPLS computerization and provide advice on the different steps that the cities may have to undergo in the process from planning and design development to testing and documentation.

The third party assessment of the cities' state of BPLS computerization was conducted to provide preliminary information, which the city governments will be using during the BPLS Automation Assessment Workshop. This will then plan the software solution that the cities should undertake given the BPLS reforms to be undertaken. Each of the cities has already identified the re-engineered BPLS process it intends to implement during the Self-Assessment Workshops in June 2012.

The last chapter of the report presents a proposal for online registration for business applications. This topic was suggested by USAID during the presentation of the initial results of the automation study on April 12, 2012. This was an addition to the scope of work of the consultant.

B. Caveats

Some caveats are in order before the presentation of the study results. First, the study was undertaken right after the BPLS renewal period but before the cities were able to organize the Self-Assessment Workshops where the streamlined processes were finally agreed on. Hence, the study recommendations were not able to focus on the solutions that squarely fit the desired BPLS identified by the cities. Second, the study does not include the costs of the different options for automation, which the cities have been inquiring about. Given the limited time and the many possibilities for automation, it was agreed that costs would be estimated during the BPLS Automation Assessment Workshop.

II.
AUTOMATING BPLS IN BATANGAS CITY

A. State of BPLS Automation in the City

1. Operations Environment

a. Batangas City does not have an Information Systems Strategic Plan (ISSP) that includes the BPLS.

b. Batangas City has a computerized BPLS under the Business Permits and Licensing Office (BPLO) and a Collection Management System (CMS) under the City Treasurer's Office (CTO). The computerized BPLS has been operational since the last quarter of 2011, while the CMS became operational in 2008. Both systems were developed from scratch and were customized based on the processes of the BPLO and CTO. The automation of the BPLS was outsourced to Cylix Tech Inc., while that of the CMS was undertaken by Strategic Solutions Inc. whose development team later moved to Cylix Tech Inc.

c. The BPLS was designed based on the JMC Unified Form and accepts applications for new permits and renewals. Assessment and payment are processed by CMS. The two systems are not linked; thus, each system carries its own separate database containing information about the business registrant. The other LGU offices involved in the issuance of business permits like the City Health Office (CHO), City Planning and Development Office/Zoning Division (CPDO/ZD), City Engineer's Office (CEO), and City Environment and Natural Resources Office (CENRO) do not have computerized processes although they keep data on business registrants in various digital forms like Microsoft Excel or Word files. There is no centralized automated system that monitors the compliance of the business registrant with the requirements of each of these offices.

d. The Bureau of Fire Protection (BFP) has its own computerized system that inputs data from copies of the Unified Application Form from the BPLO, Tax Order of Payment (TOP) and official receipt (OR) from the CTO, and Zoning Certificate and OR from the CPDO/ZD. The BFP system performs its own assessment, payment recording, and OR printing. It does not perform inspection scheduling and inspection results monitoring. It is also not linked to either the BPLS or the CTO.

e. Figure 1 presents the BPLS in Batangas City in comparison with the JMC. Based on published procedures for new business applications, there are thirteen (13) steps that a business registrant must pass through to complete the application. These steps are:

   i. Get Business Permit Application Form;
   ii. Get City Planning and Development Office (CPDO) – Zoning Certificate;
   iii. Get the Sanitary Permit;
   iv. Get the City Environment Certificate;
   v. Register with the Social Security System (SSS);
   vi. Submit registration documents from the Securities and Exchange Commission (SEC) for corporations or from the DTI for single proprietorship;
   vii. Register with the Bureau of Internal Revenue (BIR) Registration;

viii. Get Barangay Permit (3 copies);
ix. Get the TOP and OR from CTO;
x. Get Fire Safety Inspection Certificate (FSIC) (2 copies);
xi. Submit all documents to BPLO;
xii. Prepare and encode the permit; and
xiii. Print and release the permit.

Out of the 13 steps above, four are automated: (1) the preparation of the TOP and OR (step ix) through the CMS; (2) the preparation of the FSIC (step x) through the BFP system; (3) preparation and encoding of the permit (step xii); and (4) printing of the permit (step xiii). The latter two are automated through the BPLS. All the other steps are manually performed.

f. The renewal of business permits requires ten steps:

i. Get Business Permit Renewal Form;
ii. Get Barangay Permit (3 copies);
iii. Get Sanitary Permit;
iv. Get SSS Clearance;
v. Get BIR Clearance;
vi. Get the TOP and OR from CTO;
vii. Get the FSIC (2 copies);
viii. Submit all documents to BPLO;
ix. Prepare and encode the permit; and
x. Print and release the permit.

Out of the ten steps above, the following are automated: step vi through the CMS, step vii through the BFP system, and steps ix and x through the BPLS. All the other steps are manually performed.

Figure 1. The BPLS for New Business Applications and Business Renewals in Batangas City

g. Aside from the BPLS that processes applications for business permits and the CMS that processes the assessment and payment not only of business permit fees but also of real property taxes, there are other automated processes in Batangas City which are not linked with each other. These stand-alone systems include:

   i. Land Tax Assessment, Payment, and Delinquency Management System;
   ii. Treasury Management and Logistics System; and
   iii. e-NGAS (Budget and Accounting System).

h. At the time of the study, 70 percent of the registered business entities in Batangas City have been migrated into the BPLS and full migration is expected by mid-year 2012. Additional staff members from other LGU offices were "borrowed" to assist in data migration.

i. The data entered into the BPLS, which follows the Unified Form, are not necessarily the same as those in the CMS which was developed prior to the release of the JMC standards. This means that in the process flow for business registration and renewal, data will have to be entered twice, one with the BPLS and another with the CMS.

j. The operation of the BPLS has been outsourced to external developers. The tasks of process flow, security and system access, and network management; database administration; applications and infrastructure maintenance; the first-level support; and systems documentation are all with the outsourced consultants.

2. Systems Environment

a. Having been developed prior to the JMC's Unified Form, the CMS used the then-existing business application form as basis of its data schema. The BPLS, on the other hand, used the JMC Unified Form as the basis of its data schema. Both systems are separate and distinct, with their data structures and process and systems flows neither being integrated nor linked.

b. The database platform of the CMS and BPLS are disparate, with the former using Microsoft SQL Server 2008 and the latter, the Microsoft Access 2007. Both systems are on Microsoft 2008 Server Operating System (OS) and both use the same programming language, Microsoft Visual Basic 6.0 version. Both systems are on client-server architecture.

c. The Batangas City Hall has been laid with fiber optic wires for its local area network (LAN). However, issues on its provisioning have not been resolved and some of the offices have resorted to installing mini-LANs in their assigned premises. Both the BPLS and CMS have their own LANs powered by their own servers. The BPLS is on an IBM 2650, while the CMS is on two Hewlett Packard (HP) Servers, one for production and another for back-up.

d. The systems documentation, which should include the infrastructure topography, applications systems flow, data structure schema, online input forms, report format designs, security and access policy, user guide for end-users, and training materials for end-users, have not been made available. These are still works-in-process with the outsourced consultants.

B. Recommendations for the Automation of the BPLS in the City

1. Benefits of Automating BPLS

a. The JMC standard for business licensing is five steps, expected to be completed within a maximum of ten days. The INVEST Project aims to assist Batangas City put in place a system that will exceed these standards. More specifically, this system should lessen the face time or instances of interaction between the business registrant with the BPLO and the other LGU offices. With the computerization of the processes, the business registrant will have lesser face time with the BPLO, depending on which processes will be put online. Figure 2 illustrates the different automation levels consistent with the JMC standards.

Figure 2. Options for BPLS Automation Consistent with JMC Standards

POSSIBLE LEVELS OF BPLS COMPUTERIZATION

	JMC STANDARD	COMPUTERIZED	SEMI-COMPUTERIZED	SEMI-MANUAL	MANUAL
1	Securing an application form from the city or municipality;	Access online Application Form	Secure Downloadable Application Form	Secure Pre-printed Application Form	Secure Pre-printed Application Form
2	Filing or submission of the accomplished application form with attached documentary requirements;	Self-service data entry on online form and attachment of scanned documents to the application	Manual fill-up of application form; scanning of the forms; submission of scanned documents; data encoding into the BPLS. No self-service.	Manual fill-up of form, submission of photocopied documents; data encoding into the BPLS. No self-service.	Manual fill-up of form, submission of photocopied documents; consolidation of all forms in one BPLS folder/ledger. No self-service.
3	One-time assessment of taxes, fees and charges;	BPLS computes the relevant taxes, charges, and fees for every LGU office involved in BPLS, including that of the BFP. These charges are consolidated into one billed amount.	BPLS computes the relevant taxes, charges, and fees for every LGU office involved in BPLS, including that of the BFP. These charges may be consolidated into one billed amount.	BPLS computes the relevant taxes, charges, and fees for every LGU office involved in BPLS, including that of the BFP. These charges may be consolidated into one billed amount.	Manual computation of taxes, fees, and charges. Each LGU office will have its own computation of charges and billing process.
4	One-time payment of taxes, fees and charges; and	Online payment of consolidated fees via a payment gateway. Official receipt will be in digital form.	One time payment to the LGU cashier. Official Receipts may be printed separately for each LGU office.	One time payment to the LGU cashier. Official Receipts may be printed separately for each LGU office.	One time payment to the LGU cashier. Official Receipts will be written separately for each LGU office.
5	Securing the Local Chief Executive (LCE)'s Permit upon submission of Official Receipt as proof of payment of taxes, fees, and charges imposed by the LGU.	Online receipt of Business Permit with Mayor's digital signature. **Receipt of plates and stickers by courier.**	Receipt of Business Permit with Mayor's digital signature. Plates and stickers by courier or pick-up.	Receipt of Business Permit with Mayor's digital signature. Plates and stickers by courier or pick-up.	Receipt of Business Permit with Mayor's signature. Plates and stickers by courier or pick-up.
		0 Facetime with LGU	**3 Facetime with LGU**	**4 Facetime with LGU**	**5 Facetime with LGU**

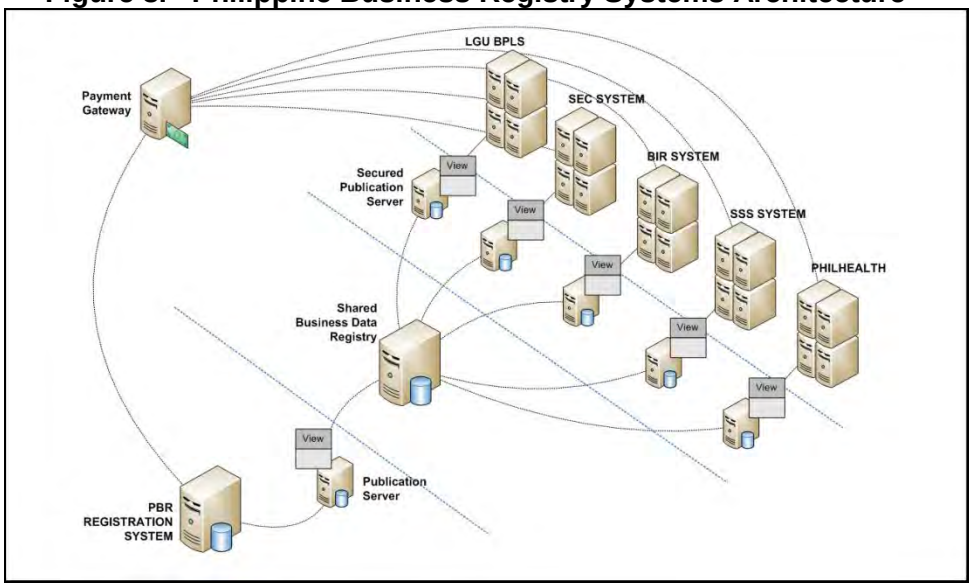
Color Legend

- Offsite Computerized Process of Registrant with BPLS
- Onsite Computerized Process of Registrant with BPLS and BPLO
- Computerized Systems Process of BPLS, non-registrant facing
- Onsite Manual Process of the Registrant and BPLO

b. The JMC standard steps cover the processes within the BPLO and have not included the prerequisite processes that involve some national government agencies like DTI, SSS, BIR, the Philippine Health Insurance Corporation (PhilHealth), and the Home Development Mutual Fund (Pag-Ibig). These have also not included the processes in the other LGU offices involved in the evaluation and approval of prerequisite clearances like the CHO, CPDO/ZD, CEO, and CENRO.

c. The availability of the Philippine Business Registry (PBR) System, at DTI's kiosks at their National Economic Research and Business Assistance Center (NERBAC) offices or anywhere with web access, with its links and data sharing with various NGAs, provides an efficient option to comply with the BPLO prerequisites. The PBR data notify the NGAs that a new business has been registered and a corresponding application will be filed with their respective offices. The availability of the PBR data behooves the LGU to incorporate in its BPLS design and implementation the necessary link to the PBR system. Figure 3 shows the enhanced PBR systems architecture that will allow secure data sharing among NGAs as well as online payment processing for all involved NGAs and LGUs in the business registration process.

Figure 3. Philippine Business Registry Systems Architecture



d. When the PBR is linked with the LGU's BPLS, data entry into the Unified Form would be simplified since a substantial amount of data would have been passed on by the PBR to the LGU. Only selected data will need to be encoded by the registrant or the BPLO staff. In the same vein, additional data required by the other LGU offices may be incorporated into the BPLS as well. The inclusion of the processes performed by the registrant with the other LGU offices into the design and implementation of the BPLS will make the whole business licensing process seamless. The integration into the BPLS of these processes that normally include verification and inspection makes the system a tool not only to generate permits and licenses for businesses but also to monitor a business' compliance with various LGU requirements.

e. It is ideal for Batangas City to put in place a fully automated BPLS. This is described in Section V of this report on "Online Business Permits and Licensing System." The ideal BPLS does away with the registrant's visit to any BPLO site. Every process is done online on a self-service mode: online forms fill-up, online submission of required documents, online assessment, online billing and payment, online notification of verified documents and inspection schedules and results, and online receipt of digital OR and Business Permit. The only non-virtual parts of the process are the release and receipt of the hard copy print of the business permit, the plate markers, and the stickers. These may be delivered by courier or picked up from the BPLO. However, in consideration of what systems are in place right now, it is more realistic to implement an automated BPLS for Batangas in phases.

2. Batangas City BPLS in Phases

a. Phase 1. Planning for BPLS

It is recommended that an over-all plan for BPLS be developed to cover the processes and data requirements of each LGU office involved in business licensing, including those

of the PBR. This will determine which offices will need to be connected to the LGU network, whether through a local area network (LAN) or a wide area network (WAN). This will also determine the volumes of businesses, transactions, tables, computations, records, and projected growth that the BPLS will handle. Planning for BPLS will entail the standardization of the technical components that every office will adhere to in terms of systems platforms, database, programming language, network, and related tools. The set of standard technical components will be used to plan for the capacity build-up for the hardware, software, and network infrastructure that will have to be in place for BPLS. The planning will also determine the talents and skills needed by Batangas City to develop the overall architecture for it BPLS solution. During this Phase, it is recommended that Batangas City engage an Information Technology (IT) solutions architect who can work with the INVEST team to formulate the BPLS plan, inclusive of its technical, functional, human resources, and policy requirements.

b. Phase 2. Deciding on the BPLS Approach.

With the BPLS Plan for Batangas City in place, it is expected that the existing disparate and unconnected systems will eventually be replaced. The existing CMS is a five-year-old application that needs to be revisited while the existing BPLS, although relatively new, was not designed to be integrated with CMS, PBR, or other LGU processes. Enhancing or upgrading these systems would be difficult since their systems documentations are not in place. Thus, replacing these systems with a new one is the prudent approach. Two options exist in accomplishing this: development of a new BPLS solution from ground up or the acquisition of an existing BPLS package with expected customization to include the link to PBR and other LGU processes.

i. Existing BPLS packages have not incorporated links to it in their solutions because PBR is a new development. This will be considered a localization requirement that BPLS solutions provider will have to eventually adhere to.

ii. The processes of other LGU offices may have been incorporated in various degrees by some BPLS packages. But none of these existing solutions have launched these processes to be accessed online via the web. None of these existing solutions offer online payment schemes and accept forms or files in digital format. These will be another customization requirement on existing BPLS packages.

iii. Enhancements to the BPLS solution may be more tedious and risk-laden, depending on how the data schema was structured in existing BPLS packages and how well the systems have been documented. This option, even if doable by the BPLS package developer, may take longer as the impact to existing tables, codes, and systems flow will have to be evaluated for re-architecting.

iv. As time to deploy a new BPLS is of the essence, and with the recent release of the “BPLS Baseline Design” crafted by the National Computer Center (NCC), the rational recommendation is to develop the new Batangas City BPLS from ground up using NCC’s design as a foundation. The said baseline design has taken into consideration links to NGA systems as well as interfaces or integration with other processes within the LGU. In the case of Batangas City, there are no existing

computerized processes that will have to be interfaced with. Computerization of these processes is a white space.

v. A full complement of software applications team will be needed to design, code, test, train users, document, and migrate data into the new BPLS. A full complement will require a project manager/analyst, a systems architect/designer, an infrastructure specialist, programmers, end-user testers, data encoders, a technical writer, and technical and functional trainers. In the absence of an IT group in Batangas City, it is recommended that the development of the new BPLS be outsourced to a qualified development team.

c. Phase 3. BPLS Design Development

Design Features Requirements – Given that the Batangas City BPLS will be customized from ground up, and using the published "BPLS Baseline Design" as foundation, the development team will finalize the features and functions that need to be incorporated in the design.

i. *Application Architecture* – The BPLS application will be web-based where the whole application processing will be lodged in the server and end-users will access the system via thin clients, passing thru the web.

ii. *User Interface (UI) Design* – The User Interface to be designed for desktops and laptops will look like the Unified Form, which scrolls in all directions, as well as the multi-part forms for other LGU offices. A UI for smaller appliances like the iPads, iPhones, Android Phones, and Blackberries will have to be designed, accommodating the Unified Form and the multi-part forms required by the other LGU offices.

iii. *Applications Design* – The applications design will take into consideration not only the regular processes of the BPLO like registration, assessment, cashiering, approval, issuance, and security but also the PBR connectivity and data sharing as well as verification, inspection, and monitoring of compliance with mandatory requirements.

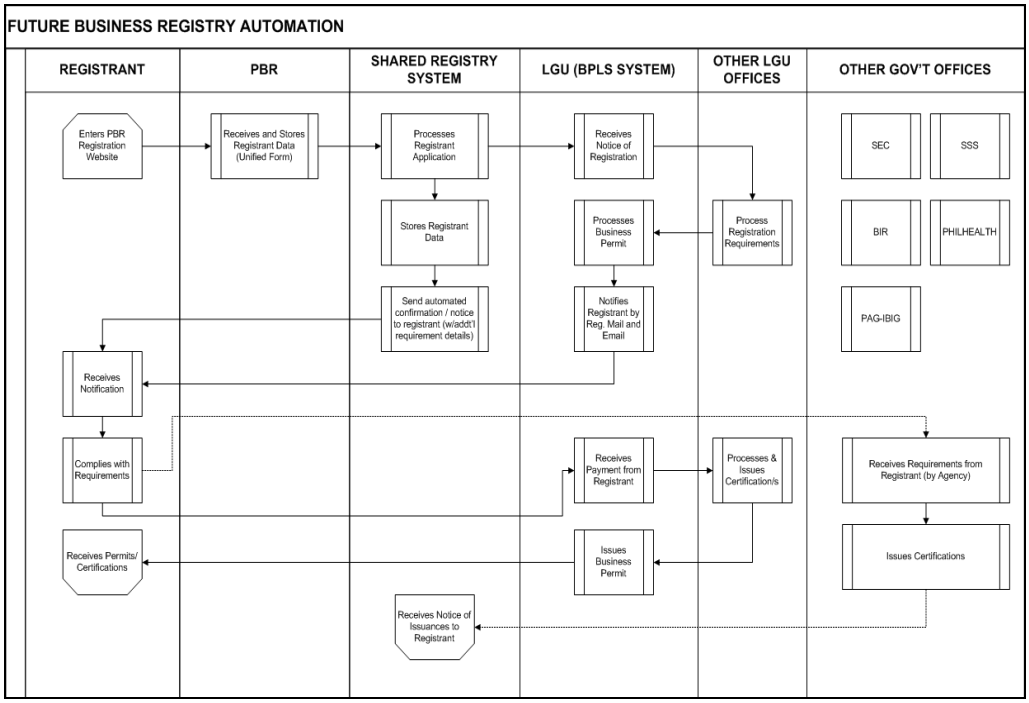
iv. *Database Design and Data Interchange* – The standardization of data definitions across the LGU, relationships between entities and data items, movements and transformation of data, and exchanges of data throughout the organization are issues that will be addressed and finalized in the BPLS Design Features Phase.

v. *Systems Documentation* – The writing and recording conventions for technical documentation, functional documentation, training materials documentation, end-use manuals and quick guides, and project communications are finalized in this BPLS Design Features Phase.

Design Scope – The BPLS Design will cover the application process and system flows, the core applications features, the entity relationships model, data interchange and integration, and the hardware and network infrastructure requirements.

i. *Application Process and System Flows* – The JMC Standard five-step business registration process will be reviewed and expanded to include the PBR connection and data sharing processes. The processes in other LGU offices will also be reviewed for integration into the BPLS flow as part of the post-licensing processes. These will include the verification process for submitted digital documents, the actual inspection process of business premises, and the monitoring of deadlines and compliance with requirements. These reviews will be in the context of computerization where data will be transformed, moved, and shared among different offices where end-users will have different roles to play. Figure 4 is an illustration of a BPLS Application Systems Flow Diagram that integrates the processes of the other LGU offices in the design and execution

Figure 4. BPLS Application Systems Flow Diagram



ii. *Core Software Features* – The minimum requirements of each of the modules to be designed will be laid out, including how data will be managed as these are integrated and secured into the different modules and how users will see and use them.

iii. *Entity Relationship Model* – The relationships between and among entities will be mapped out such that table structures can be set up most efficiently for database access and presentation. Each data item will be classified by type, defined, and described.

iv. *Data Interchange and Integration* – The movement and flow of data as they are shared using industry-standard methodology and tools will be detailed so that they can be interchanged and integrated into different applications modules.

v. *Hardware and Systems Environment* – A capacity planning activity to configure the network and hardware requirements will be conducted. This activity will also determine the systems software requirements for the BPLS as well as the data center where these infrastructures will be housed.

Core Application Modules Design – The BPLS Design will break down the whole applications into modules based on the function, timing of use, and user groups that will have access to the BPLS.

i. *PBR Connection and Data Sharing Module* – This module will be designed to link up with the PBR System, download or extract data specific to Batangas City from the PBR System, transform the data into the BPLS data schema, and upload the transformed PBR data into tables usable by the BPLS. It will also extract specific data from the BPLS to be transformed and uploaded into the PBR System for reporting processes.

ii. *Registration Module* – This module will allow business registrant self-service and BPLO-assisted data entry options to capture/create/manage the records and database of businesses operating within Batangas City based on data passed on by the PBR and on additional inputs required by the other LGU offices. The additional data will be presented as a multi-part data entry screen to the business registrant. This module will create and manage the whole portfolio of information about a particular business entity.

iii. *Document Submission Module* – This module will allow the business registrant to attach documents in different file formats like .doc, .pdf, .jpeg, and .png to show proof of compliance with the requirements of the LGU offices. This module will eliminate the production of multiple copies of the same document and thus require less paper in BPLS processing.

iv. *Assessment Module* – This module establishes/manages/tracks the regulatory taxes and fees payable to Batangas City throughout the business life of the registrant. The main function of this module is to auto-compute fees due the city based on the entered declarations of the business registrant.

v. *Fees Presentment And Payment/Cashiering Module* – This module presents to the registrant its assessed liabilities (regulatory fees, taxes, etc.) in Batangas City. It also gives the registrant several options to pay the CTO, such as manual over-the-counter payment or online payment via electronic fund transfers (EFT) using Megalink or Bancnet, PayPal, GCash, or other bank facilities. This module will manage and track the servicing of business dues and liabilities with Batangas City. The core function of this module is to receive, record, classify, and distribute payments made by registrants. It may be an externally provided web-based service by a bank (like U-share offered by Unionbank) which may be interfaced within the BPLS website. It may also be a module by the existing CMS or eNGAS implemented in Batangas City. In this case, the BPLS may just interface with such application via data interchange or applications integration.

vi. *Local Chief Executive (LCE) Approval Module* – This module is designed for the exclusive use of the Local Chief Executive (LCE) or his/her deputized designate to review all assessed registrants before issuing the business permit. Depending

on the type of business the registrant has, certain metrics may be used in evaluating an application. Approval may be systems-recommended with the option of the LCE reversing or modifying the recommendation, especially in cases where the line of business being established is classified as tightly regulated. Batangas City may opt to generate its own unique numbering for its business registrants or to use the unique Philippine Business Number (PBN) generated by the PBR.

vii. *Issuance Module* – This module posts the notification of the approval of the registrant's application on the web. It will record and track the release and issuances of all approved business registrations using other available notification channels like SMS, email, instant messaging, and telephone.

viii. *Verification, Inspection, And Compliance Module* – This module will schedule and issue mission orders when inspections of business premises or when clinical tests will be performed. Upon completion of such activities, the module accepts entries on the results, recommendations, and status of the inspection. It monitors the duration and requirement compliance and sends notifications or alerts for instances of non-compliance.

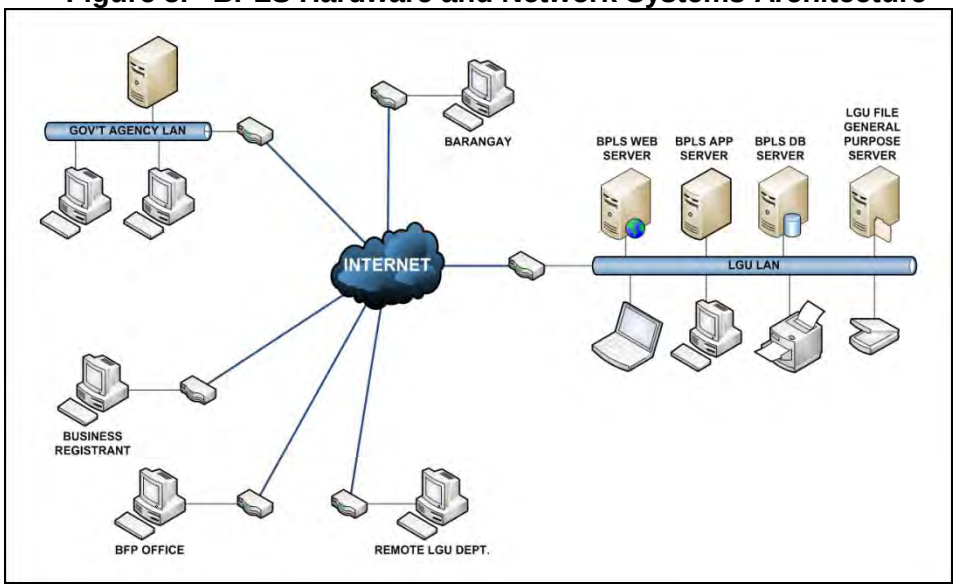
ix. *Security Module* –This module manages the BPLS roles and access of LGU users to add, edit, view, or extract data from the BPLS application and corresponding back-end databases.

Detailed Design – The Detailed Design will cover the definition of entity relationships; the database conventions, data definitions, database structures and schema; UI design for data entry forms, menus, and reports; pseudo codes for process, systems, and work flow; access and security rules; and other technical details.

Acquisition and installation – Based on the hardware capacity plan, the network and hardware infrastructure must be acquired and put in place so that programming and testing may be performed.

Figure 5 below shows a diagram of the BPLS Hardware and Network Systems Architecture connecting the LGU's BPLO with other LGU offices, barangays, BFP, other NGAs, and the business registrant via a local area network (LAN) and the internet for its wide area network (WAN).

Figure 5. BPLS Hardware and Network Systems Architecture



d. Phase 4. Programming and Testing

This phase will see the conversion of the detailed design into program codes, which are logical instructions that will make up the components of BPLS modules. Upon development, these program codes will undergo a series of tests, from unit testing, to string test, to integration test, to user acceptance test. Programming and testing will be done per application module, graduating to modules integration, until all modules are in place and working seamlessly as one in a continuous workflow.

e. Phase 5. User Training and Data Migration

This phase will set up a working BPLS in a pilot mode which will be used by end-users for training. When the system and the end-users have passed the go-live readiness assessment, actual data will be migrated from the test environment to production environment.

f. Phase 6. Go-Live and Production

Upon data migration, the system can go-live and work in a production mode. Hand-holding the end-users will help them be more familiar with the use and maintenance of the system.

g. Phase 7. Documentation, Help Desk, Support, and Maintenance.

It is expected that many questions may crop up at this phase. Setting up a help desk to respond to questions will be needed. A mechanism to escalate technical and functional issues for resolution should also be put in place. As the system is used, processes will be tweaked, and program patches will be applied. Maintaining and monitoring version changes in the BPLS will thus be mandatory. All processes, designs, codes, testing and training materials must likewise be documented, updated, and maintained.

C. Proposed BPLS Automation Timeline

Phases 1-3 will have to be executed fully before other phases could be performed. Upon completion of Phase 3, Batangas City may opt to prioritize on certain modules to be developed and implemented ahead of the others. Decongesting the lines during renewal will have big impact on the constituents of Batangas City. It is therefore recommended that the development, implementation, and roll-out of modules be on a staggered or staged basis.

a. Stage 1 – Registration, Assessment, and Fees Presentment/Cashiering plus Security Modules
b. Stage 2 – LCE Approval and Issuance of Permit Modules
c. Stage 3 – Document Submission and Verification, Inspection, and Compliance Modules
d. Stage 4 – PBR Connectivity and Data Sharing Module

Phases 1-3 will take two to three months, while Phases 4-7 for Stage 1 will take another three months. Every other stage will take about three months to complete Phase 4-7. This assumes that the infrastructure is in place, the data are migration-ready, BPLO personnel are trained, and the registrants are briefed about their new self-service enablement.

D. Introduction of New Policies

For the BPLS to be successfully implemented and adopted, LGU policies must be crafted. These policies will cover the following:

1. Use of digital forms instead of hard copy forms;
2. Self-service forms fill-up and data entry;
3. Online documents submission;
4. Online payment and pre-payment of inspection services;
5. Compliance to requirements after permit approval with strict monitoring;
6. Digital notifications and alerts;
7. Use of PBR data and adoption of PBN as business identifier/key;
8. Use of digital signatures; and
9. Security

III.
AUTOMATING BPLS IN ILOILO CITY

A. State of BPLS Automation

1. Operations Environment

a. Iloilo City does not have an ISSP that includes the BPLS.

b. Iloilo City's BPLS is automated using a package provided by a vendor chosen via a bidding process following World Bank standards. The acquisition of the system was funded by a 25% equity from the city, a 25% grant from the World Bank, and a 50% World Bank loan under the LOGOFIND program of the Department of Finance. The system included several functionalities other than the BPLS, like the Real Property Tax (RPT) and the Business Tax Enhancement Program (BTEP). The process of vendor selection included visits and interviews with cities that have earlier implemented their LGU automation solutions. The bidding terms of reference required the bidders to have had at least 10 successfully implemented LGU projects. It also required that a third party conduct an oversight assessment of the project

c. The BPLS was installed in six months, starting in the first quarter of 2008 and went live in the third quarter of the same year. Data were manually entered into the system from ledgers, with database build-up of historical data being one of the main problems. Getting contracted skilled resources for data conversion was also a challenge with hiring recommendations coming from influential sectors.

d. From the user point of view, some features of the package needed to be revised as some of the computation of taxes were not compliant with Iloilo City's regulations. The users had to exit the system and some charges and fees had to be manually computed, then re-entered into the system, before the required report was generated. These have been addressed by the vendor as a localization request.

e. Changes in the BPLS, provided they were required by local or national mandates, were made part of the vendor responsibility in its maintenance and support agreement with the city. One of the changes in the package was the adoption of the Unified Form as mandated by the JMC. This change was executed for free by the vendor. It was understood that as a package, only the vendor has the right to make changes to the system. An attempt by anyone from the Iloilo City government to change or reverse engineer BPLS may void the vendor's warranty for the package and the maintenance rights of the LGU may be forfeited.

f. The City Hall of Iloilo is still under construction. Temporarily, the BPLD, CTO, City Assessors Office (CAO), the City Engineer's Office (CEO), and other offices are housed in the Robinson's Mall. Office space is filled to capacity and there is very little room for its constituents. With such limited space, business registrants have to contend with long queues. To avoid long lines, the CTO's Examination Division adopted color coding to assign to registrants specific days when they can come back to pay for the assessed taxes and fees after verification is done.

g. The imminent transfer of offices to the new City Hall will be both an opportunity and a challenge. It will provide the opportunity to improve the IT infrastructure of Iloilo City in terms of its network. It will also allow possible improvements in the workflow of processes, provided related offices are arranged or assigned office spaces based on a systematic flow of registration steps.

h. The BFP in the city has a new head who came from the BFP office in Makati City. He has instituted radical changes in the agency's inspection processes. He has allowed post inspection of business premises within 30 to 60 days from the issuance of the business permit. He has also stopped the practice of registrants picking up the fire inspectors for the scheduled inspection. Instead, strict scheduling is practiced, and fire inspectors use their own vehicles to visit the sites. All inspections are logged and documented upon completion of the task.

i. The implementation of BPLS taught the city government some lesson, some of which may be shared with other LGUs:

    i. Observe transparency in bidding using for instance World Bank standard bidding procedures;
    ii. Learn lessons from the experience of other LGUs that have automated ahead;
    iii. Prepare better Terms of Reference based on the experiences of early adaptors to avoid mistakes and to replicate their successes;
    iv. Customize the BPLS package to include the specific requirements of end-users, who ideally should be involved in defining the areas for reform and in providing feedback;
    v. Contract only skilled people based on the job requirements and avoid political accommodation;
    vi. Include in the vendor agreement the support and maintenance of the system, wherein the latter should include the compulsory adoption of government-mandated enhancements or modifications due to policy changes; and
    vii. Review and streamline the BPLS processes, both manual and computerized annually to allow incremental yearly reduction in steps.

j. Based on the latest published procedures for new business applications, there are three steps, with several sub-steps, that a business registrant must pass through to complete the application. Excluding the tasks of comply with the need to produce the prerequisite documents, there are seven sub-steps, as follows:

    i. Permit and License Division (PLD)
        - Secure/fill-up application form
        - Secure checklist of requirements:
            - Zoning Clearance
            - Business Tax OR of last year
            - Community Tax Certificate
            - Barangay Clearance (2 copies)
            - SSS Certificate of Compliance
            - FSIC (2 copies)
            - SEC/DTI Registration with articles and by-laws
            - Permit from NGAs for regulated business

ii. City Treasurer's Office (CTO)
    - Submit form to Examination Division for assessment
    - Pay taxes and fees
    - Secure FSIC (for New Business) from the Bureau of Fire(BFP)
    - Proceed to Permit and License Division (PLD).

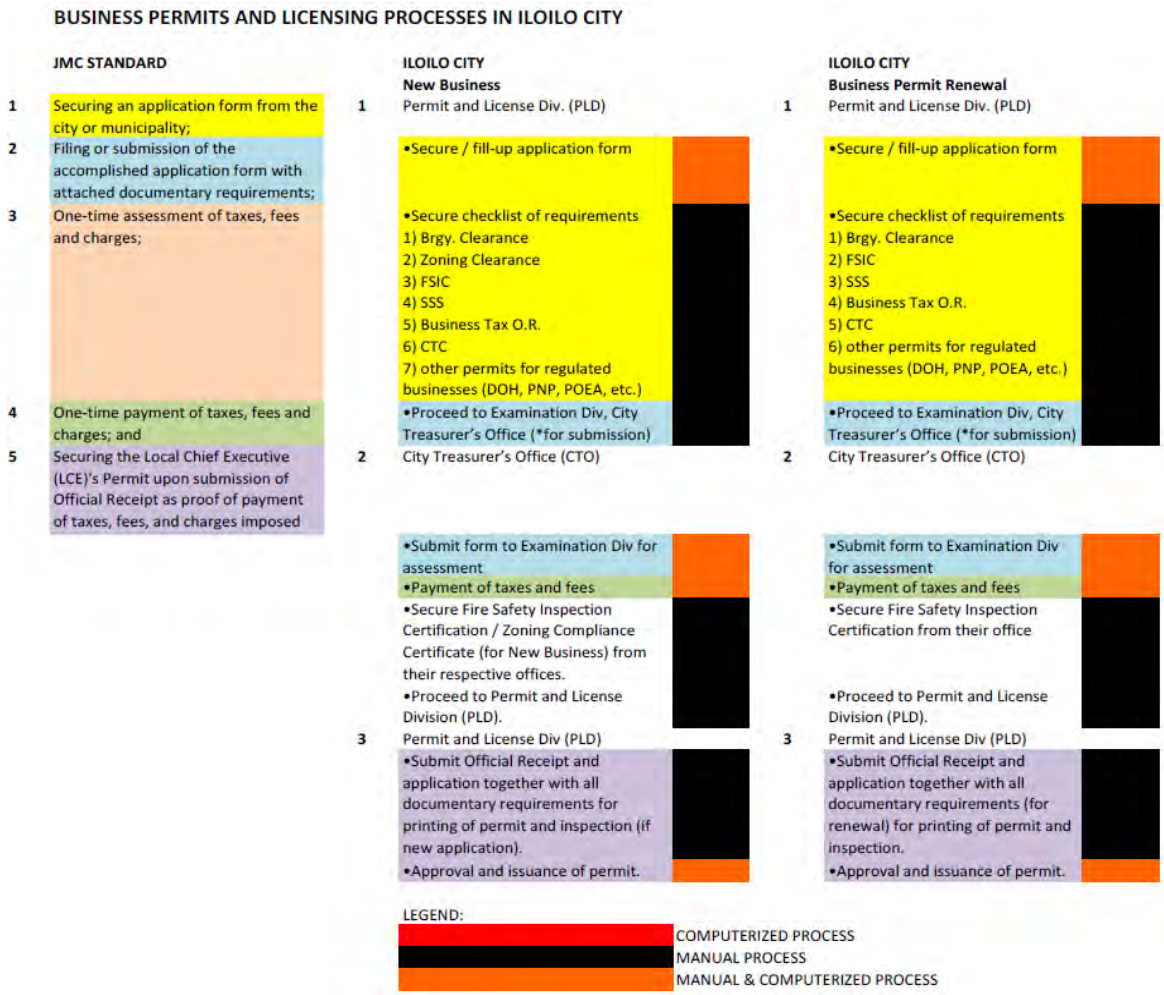
iii. Permit and License Div (PLD)
    - Submit Official Receipt and application together with all documentary requirements for printing of permit and inspection (if new application).
    - Approval and issuance of permit.

k. Four of the seven sub-steps are processes of the computerized BPLS. All other sub-steps are manually performed. These four sub-steps include:

    i. Option of the registrant to secure the Unified Form via the internet by downloading the form from the city government's website;
    ii. Assessment of the taxes and fees due with the generation of the TOP;
    iii. Recording of payment made by the registrant, except that ORs are still manually written; and
    iv. Generating the approved business permit.

Figure 6 below shows the BPLS steps for new business and renewal application in Iloilo City compared to the JMC standard steps, indicating the steps that are manual and those which are computerized.

Figure 6. Business Permits and Licensing System in Iloilo City



l. The BPLS has some level of integration with the processing the assessment and generating the TOP and the business permit in the CTO and CAO. It is also linked to the other modules of the package, specifically RPT and BTEP, both of which are the concerns of the CTO.

m. The BPLS has not incorporated the processes of the CPDO, City Zoning Office, CENRO, CEO and Barangay Offices. These LGU offices are still operating generally on manual basis.

n. The BPLS is not connected to any NGA computerized system, including that of the BFP, whose processes are still manual. It records and monitors compliance with the requirements of NGAs as well as the LGU offices involved in the licensing process.

o. Iloilo City has over 11,000 businesses that the BPLS is serving and keeping track of. It is the Mayor's objective to ensure that these businesses are not just satisfied with the

BPLS services but highly satisfied as well with the support they receive from City Hall through improved BPLS services.

p. The operation of the BPLS is managed by the IT Division. The tasks of process flow, security and system access, network, and infrastructure management; the database administration; and the first-level support are done in-house.

q. The vendor takes care of the systems and applications maintenance and support, resolution of escalated issues, implementation of modifications and enhancements, and technical and functional systems documentation.

2. Systems Environment

a. The BPLS package uses the Microsoft SQL Server 2005 Platform for its database. The application modules were developed using Visual Basic. These are running on Microsoft Windows OS lodged on an IBM X3500 server.

b. The BPLS is on a client-server architecture, accessed via a LAN at 100 mega bytes per second (MBPS). The BPLS clients use IBM and Lenovo desktops and EPSON LX300+ printers.

c. The BPLS and the other modules of the package are supported by Iloilo's infrastructure composed of a simple data center with IBM servers linked to workstations via an HP ProCurve Network Switch servicing 45 Network Nodes.

d. The IT Division is adequately staffed based on current applications. The IT manpower complement consists of one IT technical/support staff member, one network administrator, one Data Base administrator staff member, one IT functional support staff member, and one to three software developers/programmers (external, provided by the vendor).

e. The systems documentation, which include the infrastructure topography, applications systems flow, data structure schema, online input forms, report format designs, security and access policy, user guide for end-users, and training materials for end-users are available, as provided by the vendor.

B. Recommendations for the Automation of the BPLS in the City

1. Benefits of Automating BPLS

a. The JMC standard for business licensing is five steps, to be completed within a maximum of ten days. The INVEST Project aims to assist Iloilo City establish a system that will exceed these standards. Iloilo City needs a system that will lessen the face time of the business registrant with the BPLD and the other LGU offices. In reviewing the JMC standard steps, a business registrant will have five face time and interactions with the BPLD and BOSS. With the computerization of the processes, the business registrant will have lesser face time with the BPLD depending on which processes will be put online. Figure 2 presents options for computerization of the processes aimed at reducing the face time count of the business registrant with the BPLD from 5 to 4 or 3 or 0, using the 5-step JMC Standard as base.

b. The JMC standard steps cover the processes within the BPLD. It has not included the prerequisite processes that involve some national government agencies like the DTI, SSS, BIR, PhilHealth, and Pag-Ibig Fund. It has not also included the processes in the other LGU offices involved in the evaluation and approval of prerequisite clearances like the CHO, CPDO/ZD, CEO, and CENRO.

c. The availability of the PBR System, at DTI's kiosks at their NERBAC offices or anywhere with web access, with its links and data sharing with various NGAs, provides an efficient option to comply with the BPLD prerequisites. The PBR data notifies the NGAs that a new business has been registered and a corresponding application will be filed with their respective offices. The availability of the PBR data behooves the LGU to incorporate in its BPLS design and implementation the necessary link to the PBR system. The enhanced PBR Systems Architecture that will allow secure data sharing among NGAs as well as online payment processing for all involved NGAs and LGUs in the business registration process is illustrated in Figure 3 in the Batangas City section of the report.

d. When the PBR is linked with the LGU's BPLS, the data entry of the Unified Form will be simplified since these data have been passed on by the PBR to the LGU. The registrant or the BPLD staff will encode only selected data. In the same vein, additional data required by the other LGU offices may be incorporated as well into the BPLS. The inclusion of the processes performed by the registrant with the other LGU offices into the design and implementation of the BPLS will make the whole business licensing process seamless. The integration of these processes that normally include verification and inspection into the BPLS makes the system not only a tool to generate permits and licenses for businesses but also a tool to monitor a business' compliance to various LGU requirements.

e. Similar to Batangas City, it is ideal for Iloilo City to put in place a fully online BPLS as one of the options to apply and renew business permits. This is described in the attached discussion, "Online Business Permits and Licensing System." The ideal BPLS does away with the registrant's visit to any BPLD site. Every process is done online on a self-service mode: online forms fill-up, online submission of required documents, online assessment, online billing and payment, online notification of verified documents and inspection schedules and results, and online receipt of digital Official Receipt and Business Permit. The non-virtual process is the release and receipt of the hard copy print of the business permit, the plate markers, and the stickers. These may be delivered by courier or picked p from the BPLD.

Considering what systems are in place right now in Iloilo City, it is recommended that BPLS automation be implemented in phases.

2. Iloilo City BPLS in Phases

a. Phase 1: Planning for BPLS

It is recommended that an over-all plan for the automation of the city's BPLS be developed to cover the processes and data requirements of each LGU office involved in business licensing, including those of the PBR. The yearly review conducted by Iloilo to improve its processes could be a spring board for it to review the features of its vendor's package and check whether there is a gap when compared with the features of an online BPLS.

Since the existing BPLS is not integrated with the processes of other LGU offices, and part of the online BPLS requires the inclusion of their processes in the system, it is imperative to study and understand how the processes of each of the offices are mapped out in relation to the BPLS. This study is timely since it will cover not only streamlining the processes but also reviewing and upgrading all aspects of its computerization, including its quality management review for a possible International Organization for Standardization (ISO) certification. This will determine which offices will need to be connected to the LGU network, either through a local area network or a wide area network). The package will be assessed whether or not it can be modified to accommodate the inclusion of the additional processes of the other LGU offices as well as establish links with other systems like the PBR.

This study will also determine the volumes of businesses, transactions, tables, computations, records, and projected growth that the BPLS will handle. If the package can be modified by inserting additional programming codes into its source codes and adding additional tables or fields to existing tables, then the technical components that every office will adhere to in terms of systems platforms, database, programming language, network, and related tools would need to be standardized. If, on the other hand, the additional processes can be incorporated outside of the package, but will be allowed interfaces with the BPLS, then the tools and programming language may not necessarily be the same with the native language used by the BPLS package.

Only the vendor can execute any change in the package. Hence, it is incumbent on the city to ensure that changes in specifications are discussed with the vendor up to the minutest detail to avoid wrong modifications to the system. The technical details of the modification should be transparent to the Iloilo IT Division.

The study should also cover capacity planning for the hardware, software, and network infrastructure that will have to be in place for the extended BPLS, while determining the additional talents and skills needed by Iloilo City to operate and maintain the overall features of the online BPLS. During this Phase, it is recommended that Iloilo City form its user group team and engage the solutions architect of the vendor who can work with the INVEST team to formulate the BPLS plan, inclusive of its technical, functional, human resources, and policy requirements.

b. Phase 2: Deciding the BPLS Approach

With the BPLS study having been done and the plan for the automation of the BPLS in Iloilo City having been formulated, it is expected that the existing system will be extended and expanded. The existing BPLS should be revisited for further customization to include the link with the PBR and other LGU processes.

1. Existing BPLS packages in the marketplace have not incorporated the PBR into their solutions because it is a new development. This will be considered a localization requirement that the BPLS solutions provider will have to eventually adhere to.

2. The processes of other LGU offices have been, to a limited degree, incorporated in the BPLS of the city. But the package has not launched these processes online via the web. It does not offer online payment schemes and does not accept forms or files in digital format. Giving it the capability to do so will be another customization

requirement on existing BPLS packages. Depending on how the data schema was structured in the existing BPLS packages and how well the systems have been documented, enhancements to the BPLS solution may be more tedious and risk-laden. This option, even if doable by the BPLS package developer, may also take longer as the impact on existing tables, codes, and systems flow will have to be evaluated for re-architecting.

3. The vendor may refer to the recently released "BPLS Automation Baseline Design Guide" developed by the National Computer Center (NCC), to redesign and extend and expand the existing BPLS using NCC's design as reference guide. The said baseline design has taken into consideration links to NGA systems as well as interfaces or integration with other processes within the LGU. In the case of Iloilo City, existing integration with other LGU offices will be enhanced and the processes of the other LGU offices will be incorporated.

4. The existing complement of the vendor team may need to be augmented with software applications talents that are needed to redesign, code, test, train users, document, and migrate data into the upgraded BPLS. A full complement will require a project manager/analyst, a systems architect/designer, an infrastructure specialist, programmers, end-user testers, data encoders, a technical writer, and technical and functional trainers.

c. Phase 3. BPLS Gap Development

1. This approach assumes that the existing system will be extended such that its existing data entry screens may be launched on the web for possible self-service renewal applications by business registrants.

2. The facility for online payment may also be incorporated. This involves engaging existing bank facilities as a payment gateway in Iloilo City. It will also require accessing the existing BPLS for the data on the assessed fees to be paid by the registrant. The payment gateway may issue a provisional receipt while the official receipt from CTO may be released together with the business permit later.

3. All other processes within the BPLS will not be modified. This approach will provide time for the vendor team to focus on the modifications of BPLS in Phase 4 below.

d. Phase 4: New BPLS Design Development

<u>Design Features Requirements</u> – Given that the Iloilo City BPLS will be expanded to include additional processes, and using the published "BPLS Baseline Design" as reference guide, the vendor development team will finalize the features and functions that need to be incorporated in the upgrade design.

i. *Application Architecture* – The BPLS application will be redesigned to be web-based where the whole application processing will be lodged in the server and end-users will access the system via thin clients, passing through the web.

ii. *UI Design* – The User Interface to be designed for desktops and laptops will look like the Unified Form, which scrolls in all directions, as well as the multi-part

forms for other LGU offices. A UI for smaller appliances like the iPads, iPhones, Android Phones, and Blackberries will have to be designed, accommodating the Unified Form and the multi-part forms required by the other LGU offices.

iii. *Applications Design* – The Applications Design will take into consideration not only the regular processes of the BPLD like registration, assessment, cashiering, approval, issuance, and security but will also the PBR connectivity and data sharing as well as verification, inspection, and monitoring of compliance with mandatory requirements.

iv. *Database Design and Data Interchange* – The standardization of data definitions across the LGU, relationships between entities and data items, movements and transformation of data, and exchanges of data throughout the organization are issues that will be addressed and finalized in the BPLS Design Features Phase.

v. *Systems Documentation* – The writing and recording convention for technical documentation, for functional documentation, for training materials documentation, for end-use manuals and quick guides, and for project communications are finalized in this BPLS Design Features Phase.

Design Scope – The BPLS Design will cover the application process and system flows, core applications features, entity relationships model, data interchange and integration, and hardware and network infrastructure requirements. Except for the first and last, these tasks may all become transparent to the Iloilo IT team as the vendor may keep these steps as part of their proprietary methodology.

i. *Application Process and System Flows* – The JMC Standard five-step business registration process will be reviewed and expanded to include the PBR connection and data sharing processes. The processes in other LGU offices will also be reviewed for integration into the BPLS flow as part of the post-licensing processes. These will include the verification process for submitted digital documents, the actual inspection process of business premises, and the monitoring of deadlines and compliance with requirements. These reviews will be in the context of computerization where data will be transformed, moved, and shared among different offices where end-users will have different roles to play. Figure 4 is an example of the BPLS Application Systems Flow Diagram that integrates the processes of the other LGU offices in the design and execution.

ii. *Core Software Features* – The minimum requirements of each of the modules to be designed will be laid out, including how data will be managed as these are integrated and secured into the different modules and how users will see and use them.

iii. *Entity Relationship Model* – The relationships between and among entities will be mapped out such that table structures can be set up most efficiently for database access and presentation. Each data item will be classified by type, defined, and described.

iv. *Data Interchange and Integration* – The movement and flow of data as they are shared using industry-standard methodology and tools will be detailed so that they can be interchanged and integrated into different applications modules.

v. *Hardware and Systems Environment* – A capacity planning activity will be conducted to configure the network and hardware requirements. This activity will also determine the systems software requirements for the BPLS as well as the data center where these infrastructures will be housed.

Core Application Modules Design – The BPLS Design will break down the whole applications into modules based on the function, timing of use and user groups with access to the BPLS. These have been described in the chapter on the automation of Batangas City's BPLS.

Detailed Design – The detailed design will cover the definition of entity relationships; the database conventions, data definitions, database structures and schema; UI design for data entry forms, menus, and reports; pseudo codes for process, systems, and work flow; access and security rules; and other technical details.

Acquisition and Installation - Based on the hardware capacity plan, the network and hardware infrastructure must be acquired and put in place so that programming and testing may be performed.

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This phase will see the conversion of the detailed design into program codes, which are logical instructions that will make up the components of BPLS modules. Upon their development, these program codes will undergo a series of tests, from unit testing, to string test, to integration test, to user acceptance test. Programming and testing will be done per application module, graduating to modules integration, until all modules are in place and working seamlessly as one in a continuous workflow. Except for the user acceptance testing, all other tasks here will be the responsibility of the vendor.

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This phase will set up a working BPLS in a pilot mode which will be used by end-users for training. When the system and the end-users have passed the go-live readiness assessment, actual data will be migrated from the test environment to production environment. These tasks will be a major responsibility of the LGU team represented by all offices involved in business licensing.

f. Phase 7: Go-Live and Production

Upon data migration, the system can go-live and work in a production mode. Hand-holding of the end-users by the vendor will help them be more familiar with the use and maintenance of the system.

g. Phase 8: Documentation, Help Desk, Support, and Maintenance

It is expected that many questions may crop up at this phase. Setting up a help desk to respond to questions will be needed. This help desk will be the first level support that

the IT Division will put up. A mechanism to escalate technical and functional issues for resolution by the vendor should also be set. As the system is used, processes will be tweaked, and program patches will be applied. Maintaining and monitoring version changes in the BPLS will thus be mandatory. All processes, designs, codes, testing and training materials must likewise be documented, updated, and maintained.

C. Proposed BPLS Automation Timeline

1. Phases 1-3 will have to be executed fully before other phases could be performed. Upon completion of Phase 3, Iloilo City may opt to prioritize certain modules to be developed and implemented ahead of the others. Decongesting the lines during renewal will have a big impact on the constituents of Iloilo City. It is thus recommended that the development, implementation, and roll-out of modules be on a staggered or staged basis.

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   b. Stage 2 – LCE Approval and Issuance of Permit Modules
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   d. Stage 4 - PBR Connectivity and Data Sharing Module

2. Phases 1-3 will take two to three months, while Phases 4-7 for Stage 1 will take another 3 months. Every other stage will take about 3 months to complete Phase 4-7. This assumes that the infrastructure is in place, the data are migration-ready, BPLD personnel are trained, and the registrants are briefed about their new self-service enablement.

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2. Self-service forms fill-up and data entry;
3. Online documents submission;
4. Online payment and pre-payment of inspection services;
5. Compliance to requirements after permit approval with strict monitoring;
6. Digital notifications and alerts;
7. Use of PBR data and adoption of PBN as business identifier/key;
8. Use of digital signature;
9. Security; and
10. Tighter policy on vendor relationship

IV.
AUTOMATING BPLS IN CAGAYAN DE ORO CITY

A. State of BPLS Automation in the City

1. Operations Environment

a. Cagayan de Oro (CDO) City does not have an ISSP that includes the BPLS.

b. CDO City has a computerized BPLS under its Business Permit and Licensing Division (BPLD) of the CTO. The computerized BPLS has been operational since 1995. It was developed in-house from the ground up and customized based on the processes of the CTO.

c. The BPLS was designed based on CDO's Business Application Form. It performs the following integrated processes:

   i. Data entry for business applications and renewals
   ii. City Assessor Office's assessment to generate of the Tax Due Worksheets (TDW) that contain computations for the application fee and other charges, as well as charges for the BFP
   iii. Payment processing by the CTO
   iv. Printing of the CHO's Sanitary Permit
   v. Printing of the City Mayor's Business Permit
   vi. Provision of access to the data of business registrants by the City Office of Building Official (OBO)
   vii. Recording of the compliance of business registrants with the various document requirements of other LGU offices.

d. The processes of the other LGU offices involved in the issuance of business permits like the City Planning and Development Office/Zoning Division (CPDO/ZD), City Engineer's Office (CEO), and the City Environment and Natural Resources Office (CENRO) are not yet integrated into the BPLS.

e. The operations of the BFP is not computerized but is linked to the BPLS to enable it to input into the TDW the computed fees that a registrant needs to pay. Payment, recording, and issuance of the BFP official receipt are done manually.

f. Three radio telecommunications towers have been provided by USAID to CDO to establish the physical link that has allowed the BFP, OBO, and CHO to access BPLS data. Unfortunately, the tower linking OBO to BPLS was damaged by Typhoon Sendong in 2011, thus breaking OBO's link to the BPLS.

g. From the time BPLS was first used in 1995, its server has undergone five changes/upgrades while its applications have undergone several enhancements which have resulted in significant process streamlining.

h. Based on published procedures for new business applications, there are four (4) steps that a business registrant must undergo to complete the application. Excluding the securing of prerequisite documents, there are twelve (12) sub-steps. These steps and sub-steps are:

i. Submission and evaluation of application for requirements
   - Securing from BPLD, by the applicant, the Business License application
   - Filling-out, by the applicant, of all data required and attaching of documentary requirements
     - Business Name Registration
     - Tax Identification Number (TIN)
     - Pag-ibig registration
     - Philhealth registration
     - OBO clearance
     - Sanitary certification
     - FSIC
     - Barangay Clearance
   - Submission of accomplished application to the Business One-Stop Shop (BOSS) for evaluation of documentary attachments

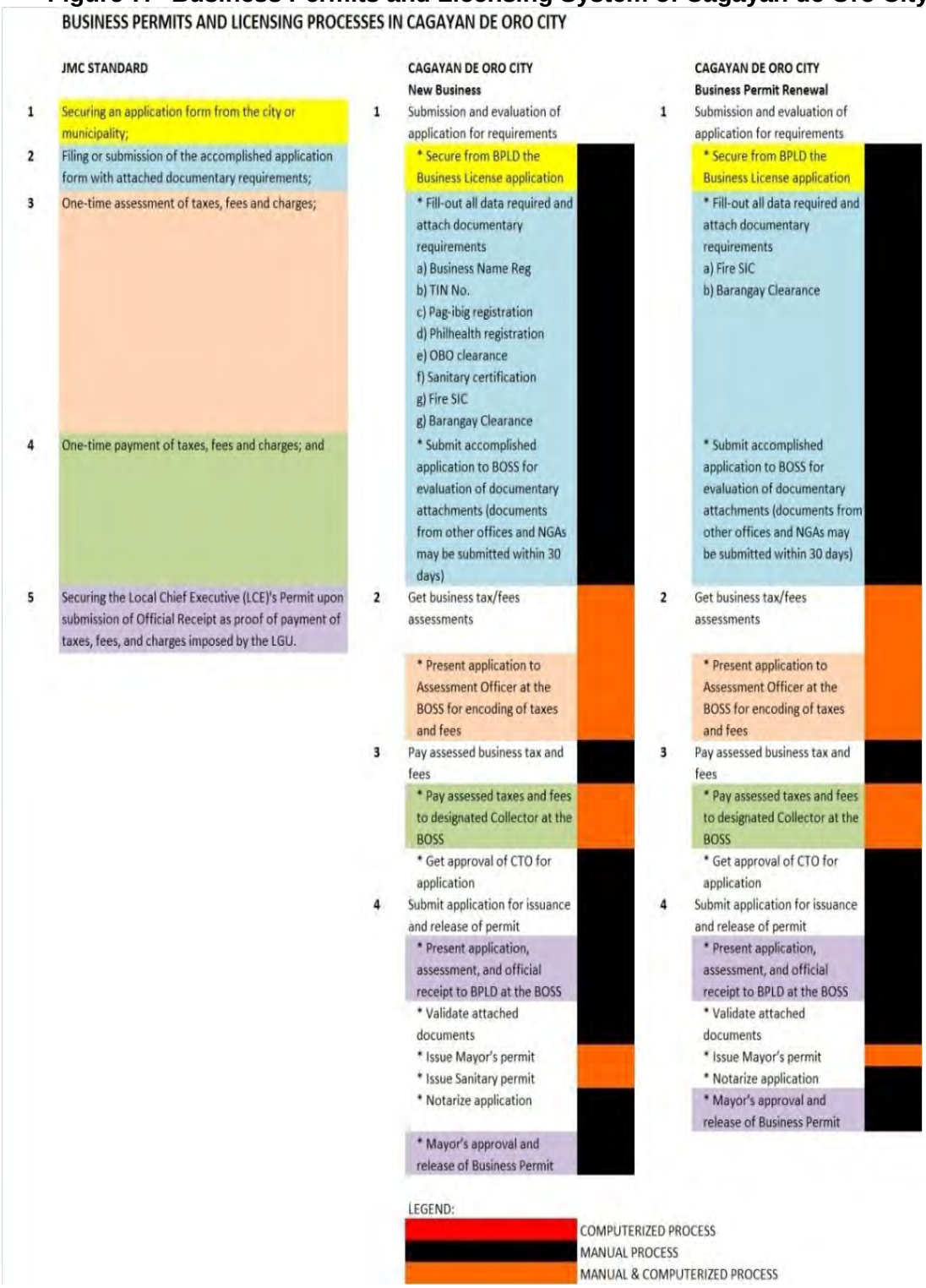
ii. Securing of business tax/fees assessments
   - Presentation of application to Assessment Officer at the BOSS for encoding of taxes and fees

iii. Payment of assessed business tax and fees
   - Payment of assessed taxes and fees to designated Collector at the BOSS
   - Securing of approval of CTO for application

iv. Submission of application for issuance and release of permit
   - Presentation of application, assessment, and official receipt to BPLD at the BOSS
   - Validation of attached documents
   - Issuance of Mayor's permit
   - Issuance of Sanitary permit
   - Have Notarization of application
   - Secure Mayor's approval and release of Business Permit

i. Four of the 12 sub-steps are processes of the computerized BPLS. All other sub steps are manually performed (refer to Figure 7).

Figure 7. Business Permits and Licensing System of Cagayan de Oro City



j. There are other LGU processes that have been automated. These processes, which are stand-alone and are not linked to any other system, are:
   i. Engineering

ii. Planning –Geographic Based Information Systems (GIS)
iii. At Local Civil Registry (focusing on Typhoon Sendong casualties for rehabilitation)
iv. Human Resources (HR)
v. Real Property Tax (RPT)
vi. Accounting – in-house e-NGAS
vii. Payroll
viii. Budget

k. By the time of the study, the BPLS of CDO has more than 18,000 registered businesses. However, due to the effects of Typhoon Sendong the previous year, only a little over 16,000 businesses had applied for renewal. During the January 2011 renewal period, the BOSS processed about a thousand registrations a day.

l. During renewal period, the BOSS team is complemented by additional staff from CTO and other LGU offices. To decongest the long lines during this period, the CDO Mayor has issued an Executive Order that declared that documentary compliance to various NGA requirements need not be prerequisites to business registration. Instead, the registrant is asked to execute an undertaking that compliance to requirements would be accomplished within thirty (30) days after the closing of the renewal period. With the extension of the compliance period, the space occupied by NGAs representatives was moved outside the BOSS premises. The last renewal period saw DTI's NERBAC lending a hand by setting up a satellite BOSS operation in its premises. It handled all the BPLS processes except the generation of the Mayor's signature on the business permit.

m. The BPLS has always been run and managed by the CTO and its IT Division. The tasks of process flow, system security, and network management; database administration; applications and infrastructure maintenance; first-level and escalation support; and systems documentation are all done in-house.

2. Systems Environment

a. Having been developed prior to the JMC Unified Form, the BPLS has stuck to the use of its own application form and has not adopted the new one. The data structure of the BPLS conforms to this own application form.

b. From its development in 1993, the BPLS' database platform has not changed. It is the Firebird SQL Platform running on Slackware Linux with applications developed using 4GL Delphi Borland. Although not as popular as other open source platforms, both Firebird and Slackware Linux continue to be supported by its user community. On the other hand, the ownership of 4GL Delphi Borland has changed several times and the program is now being retired from the market. The BPLS system is on a client-server architecture that is supported by its platform of choice.

c. The CTO BOSS area is on a 100/1000 MBPS LAN and 180 MBPS wireless network. The BPLS runs on an IBM server for production, while the backup and gateway system is on an HP server. Connected to the LAN are 40 mostly clone workstations, six Acer laptops, and 40 printers.

d. The BPLS system, as well as all the other computerized systems in CDO, is maintained by the CTO's ITD team composed of two (2) IT technical support staff members, two DB administrators, three IT functional staff members, and two software developers/ programmers. This is a seasoned IT team; most of which have been involved with the development and maintenance of BPLS from its inception in 1993.

e. The systems documentation which should include the infrastructure topography, applications systems flow, data structure schema, online input forms, report format designs, security and access policy, user guide for end-users, and training materials for end-users have not been made available. These are in several state of completion and most are still works-in-progress among the IT team members.

B. Recommendations for the Automation of the BPLS in the City

1. Benefits of Automating BPLS

a. The JMC standard for business licensing is five steps, which are expected to be completed within a maximum of ten days. The Invest Project aims to put in place in CDO City a system that will exceed the standards. CDO City needs a system that will lessen the face time of the business registrant with the BPLD and the other LGU offices. In reviewing the JMC standard steps, a business registrant will have five face time and interactions with the BPLD and the BOSS. With the computerization of the processes, the business registrant will have lesser face time with the BPLD depending on which processes will be put online.

b. The JMC Standard steps cover the processes within the BPLD. It has not included the prerequisite processes that involve some national government agencies like DTI, SSS, BIR, PhilHealth, and Pag-Ibig. It has not also included the processes in the other LGU offices involved in the evaluation and approval of prerequisite clearances like the City Health Office (CHO), City Planning and Development Office/Zoning Division (CPDO/ZD), City Engineer's Office (CEO), City Environment and Natural Resources Office (CENRO).

c. The availability of the PBR System, at DTI's kiosks at their NERBAC offices or anywhere with web access, with its links and data sharing with various NGAs, provides an efficient option to comply with the BPLD prerequisites. The PBR data notifies the NGAs that a new business has been registered and a corresponding application will be filed with their respective offices. The availability of the PBR data behooves the LGU to incorporate in its BPLS design and implementation the necessary link to the PBR system. The enhanced PBR Systems Architecture that will allow secure data sharing among NGAs as well as online payment processing for all involved NGAs and LGUs in the business registration process is illustrated in Figure 3 in the Batangas City section of the report.

d. When the PBR is linked with the LGU's BPLS, the data entry of the Unified Form will be simplified since these data have been passed on by the PBR to the LGU. Only selected data will be encoded by the registrant or the BPLD staff. In the same vein, additional data required by the other LGU offices may be incorporated as well into the BPLS. The inclusion of the processes performed by the registrant with the other LGU offices into the design and implementation of the BPLS will make the whole business licensing process seamless. The integration of these processes that normally include verification and

inspection into the BPLS makes the system not only a tool to generate permits and licenses for businesses but also a tool to monitor a business' compliance to various LGU requirements.

e. It is ideal for CDO City to put in place a fully online BPLS as one of the options to apply and renew business permits. This is described in the attached discussion, "Online Business Permits and Licensing System." The ideal BPLS does away with the registrant's visit to any BPLD site. Every process is done online on a self-service mode: online forms fill-up, online submission of required documents, online assessment, online billing and payment, online notification of verified documents and inspection schedules and results, and online receipt of digital Official Receipt and Business Permit. The non-virtual process is the release and receipt of the hard copy print of the business permit, the plate markers, and the stickers. These may be delivered by courier or picked p from the BPLD. However, in consideration to what systems are in place right now, it is more realistic to implement BPLS in phases.

2. BPLS Automation in Phases

As the next step in streamlining the business permit and licensing processes in Cagayan de Oro City, it is recommended that the city's BPLS be automated in phrases.

a. Phase I: Planning for BPLS

It is recommended that an over-all plan for BPLS be developed to cover the processes and data requirements of each LGU office involved in business licensing, including that of the PBR. The proposal forwarded by CDO to USAID through the latter's LINC-EG Project for the re-engineering its BPLS is very timely since it covers not only streamlining BPLS processes but also reviewing and upgrading all aspects of its computerization, including its quality management review for ISO certification. A plan such as this proposal should determine which offices will need to be connected to the LGU network, whether a local area network (LAN) or a wide area network (WAN). It should also determine the volumes of businesses, transactions, tables, computations, records, and projected growth that the BPLS will handle. The plan should likewise provide for the standardization of the technical components that every office will adhere to in terms of systems platforms, database, programming language, network, and related tools. The fact that it has been taken out of the market signals that the programming tool used to develop the BPLS (Borland Delphi) has reached its end-of-life and will eventually be de-supported. It is thus incumbent upon CDO to consider another programming platform to support its next generation of BPLS.

The planning and re-engineering exercise must also provide for the hardware, software, and network infrastructure that will have to be in place for the BPLS. It must also determine the additional talents and skills needed by CDO City to develop the overall architecture for its BPLS solution. During this Phase, it is recommended that CDO City form its re-engineering team and engage an IT solutions architect who can work with the INVEST team to formulate the BPLS plan, inclusive of its technical, functional, human resources, and policy requirements.

b. Phase 2: Deciding the BPLS Approach.

With the BPLS Plan for CDO City in place, it is expected that the existing system will be extended and expanded. The existing BPLS will be revisited for further customization to include the PBR link and other LGU processes. With the withdrawal of the Borland Delphi from the marketplace, BPLS will have to eventually be redeveloped using a different programming language. This will be an opportunity for CDO to adopt the use of the JMC Unified Form and revamp not only its database schema but the whole BPLS as well. There are two options to redesign and rewrite the existing BPLS: develop a refurbished BPLS solution using the current one as foundation or acquire an existing BPLS package that would be customized to include the PBR link and other LGU processes.

i. Because the PBR is a new development, existing BPLS packages in the marketplace have not incorporated it in their solutions. This will be a localization requirement that the BPLS solutions provider will have to eventually provide for.

ii. The processes of other LGU offices may have been incorporated into the system in various degrees by some BPLS packages. But none of these existing solutions have launched these processes to be accessed online via the web. None of these existing solutions offer online payment schemes. None of these existing solutions accept forms or files in digital format. These will present another set of customization of the existing BPLS packages. Depending on how the data schema was structured in these packages and how well the systems have been documented, enhancements to the BPLS solution may be more tedious and risk-laden. This option, even if doable by the BPLS package developer, may take longer as the impact on existing tables, codes, and systems flow will have to be evaluated for re-architecting.

iii. Because the need to deploy a new BPLS is urgent, CDO may take a two-pronged approach: (i) the enhancement of the existing system on the same platform as a stop-gap approach; and (ii) the redesign and rewrite of the BPLS using a new development platform. With the recent released of the "BPLS Automation Baseline Design Guide" developed by the National Computer Center (NCC), the rational recommendation is to redesign the existing BPLS using NCC's design as reference guide for extension and expansion. The said baseline design has taken into consideration links to NGA systems as well as interfaces or integration with other processes within the LGU. In the case of CDO City, the existing integration of BPLS processes with those of other relevant LGU offices will be enhanced.

iv. The existing complement of the ITD team may need to be augmented with software applications talents to redesign, code, test, train users, document, and migrate data into the upgraded BPLS. A full complement will require a project manager/analyst, a systems architect/designer, an infrastructure specialist, programmers, end-user testers, data encoders, a technical writer, and technical and functional trainers.

c. Phase 3: BPLS Gap Development

This approach assumes that the existing system will be extended such that its existing data entry screens may be launched on the web for possible self-service renewal applications.

The facility for online payment may also be incorporated. This involves engaging existing bank facilities as a payment gateway for CDO. This process will need to access the existing BPLS for the data on the assessed fees to be paid by the registrant. The payment gateway may issue a provisional receipt while the official receipt from CTO may be released together with the business permit later.

All other processes within the BPLS will not be modified. This will provide time for CDO's IT team to focus on the redesign and rewrite of BPLS in Phase 4 discussed below.

d. Phase 4: New BPLS Design Development

Design Features Requirements – Given that the CDO City BPLS will be redesigned for enhancement, and using the published "BPLS Baseline Design" as reference guide, the development team will need to finalize the features and functions that need to be incorporated into the new design.

i. *Application Architecture* – The BPLS application will be web-based where the whole application processing will be lodged in the server and end-users will access the system via thin clients, passing through the web.

ii. *User Interface (UI) Desig*n – The User Interface to be designed for desktops and laptops will look like the Unified Form, which scrolls in all directions, as well as the multi-part forms for other LGU offices. A UI for smaller appliances like iPads, iPhones, Android Phones, and Blackberries will have to be designed, accommodating the Unified Form and the multi-part forms required by the other LGU offices.

iii. *Applications Design* – The Applications Design will take into account not only the regular processes of the BPLD like registration, assessment, cashiering, approval, issuance, and security but also the PBR connectivity and data sharing as well as verification, inspection, and monitoring of compliance with mandatory requirements.

iv. *Database Design and Data Interchange* – The standardization of data definitions across the LGU, relationships between entities and data items, movements and transformation of data, and exchanges of data throughout the organization are issues that will be addressed and finalized in the BPLS Design Features Phase.

v. *Systems Documentation* – The writing and recording conventions for technical, functional, training materials, end-use manuals and quick guides, and project communications documentations are finalized in this BPLS Design Features Phase.

vi. *Access Approach* – The congestion in a single BOSS site during the renewal period may be addressed by replicating the BOSS set-up installed by NERBAC R10 this year. CDO plans to put up satellite BOSS in its four public markets and one transportation terminal. This may be done via internet connections or by reusing the existing radio communications towers. An

evaluation of options will have to be carried out to implement these satellite branches of BOSS.

Design Scope–The BPLS Design will cover the application process and system flows, the core applications features, the entity relationships model, data interchange and integration, and the hardware and network infrastructure requirements.

i. *Application Process and System Flows* – The JMC Standard 5-step business registration process will be reviewed and expanded to include the PBR connection and data sharing processes. The processes in other LGU offices will also be reviewed for integration with the BPLS flow as part of the post-licensing processes. These will include the verification process for submitted digital documents, the actual inspection process of business premises, and the monitoring of deadlines and compliance with requirements. These reviews will be in the context of computerization where data will be transformed, moved, and shared among different offices where end-users will have different roles to play.

ii. *Core Software Features* – The minimum requirements of each of the modules to be designed will be laid out, including how data will be managed as these are integrated and secured into the different modules and how users will see and use them.

iii. *Entity Relationship Model* – The relationships between and among entities will be mapped out such that table structures can be set up most efficiently for database access and presentation. Each data item will be classified by type, defined, and described.

iv. *Data Interchange and Integration* – The movement and flow of data as these are shared using industry-standard methodology and tools will be detailed so that they can be interchanged and integrated into different applications modules.

v. *Hardware and Systems Environment* – The planning exercise will need to configure the network, hardware and software requirements of the system. It will also determine the requirements of the data center where these infrastructures will be housed.

Core Application Modules Design – The BPLS Design will break down the whole applications into modules based on the function, timing of use, and user groups who will have access to the BPLS. These modules had been described in the chapter on the automation of Batangas City's BPLS.

Detailed Design – The Detailed Design will cover the definition of entity relationships; the database conventions, data definitions, database structures and schema; UI design for data entry forms, menus, and reports; pseudo codes for process, systems, and work flow; access and security rules; and other technical details.

Acquisition and Installation. Based on the hardware capacity plan, the network and hardware infrastructure must be acquired and put in place so that programming and testing may be performed.

e. Phase 5. Programming and Testing.

This phase will see the conversion of the detailed design into program codes, which are logical instructions that will make up the components of BPLS modules. After being developed, these program codes will undergo a series of tests, from unit test, to string test, to integration test, to user acceptance test. Each application modules will be programmed and tested, and thereafter integrated, until all modules are in place and working seamlessly.

f. Phase 6. User Training and Data Migration.

This phase will see the pilot-testing of a working BPLS which will be used by end-users for train-testing. When the system and the end-users have passed the go-live readiness assessment, actual data will be migrated from the test environment to production environment.

g. Phase 7. Go-Live and Production.

Upon data migration, the system can go-live and work in a production mode. Hand-holding the end-users will help them be more familiar with the use and maintenance of the system.

h. Phase 8. Documentation, Help Desk, Support, and Maintenance

It is expected that many questions may arise during this phase. Setting up a help desk to respond to such questions will be needed. A mechanism to escalate technical and functional issues for resolution should be put in place. As the system is used, processes will be tweaked, and program patches will be applied. Maintaining and monitoring version changes of BPLS will thus be mandatory. All processes, designs, codes, testing and training materials must be documented, updated, and maintained.

C. Proposed BPLS Automation Timeline

Phases 1-3 will have to be executed fully before other phases could be performed. Upon completion of Phase 3, CDO City may opt to prioritize certain modules for development and implementation ahead of the others. Decongesting the lines during renewal will have big impact on the constituents of CDO City. It is recommended that the development, implementation, and roll-out of modules be on a staggered or staged basis.

1. Stage 1 – Registration, Assessment, and Fees Presentment/Cashiering plus Security Modules
2. Stage 2 – LCE Approval and Issuance of Permit Modules

   Stage 3 - Document Submission and Verification, Inspection, and Compliance Modules

   Stage 4 - PBR Connectivity and Data Sharing Module

Phases 1-3 will take two to three months, while Phases 4-7 for Stage 1 will take another three months. Every other stage will take about 3 months to complete Phases 4-7. This

assumes that the infrastructure is in place, the data are migration-ready, BPLD personnel are trained, and the registrants are briefed about their new self-service enablement.

D. Introduction of New Policies

For the BPLS to be successfully implemented and adopted, LGU policies must be crafted. These policies will cover the following:

1. Use of digital forms instead of hard copy forms;
2. Self-service forms fill-up and data entry;
3. Online documents submission;
4. Online payment and pre-payment of inspection services;
5. Compliance to requirements after permit approval with strict monitoring;
6. Digital notifications and alerts;
7. Use of PBR data and adoption of PBN as business identifier/key;
8. Use of digital signatures;
9. Expanding BPLS reach with multiple BOSS; and
10. Security.

V.
ONLINE BUSINESS PERMITS AND LICENSING SYSTEM

A. Background

The enhanced PBR Systems Architecture that will allow secure data sharing among NGAs as well as online payment processing for all involved NGAs and LGUs in the business registration process is illustrated in Figure 3 in the Batangas City section of the report.

1. The Standards

The Joint Memorandum Circular (JMC) of August 6, 2010 of the Department of Trade and Industry (DTI) and the Department of Interior and Local Governments (DILG) mandates the process for applying for new and renewal of municipal and city business permits. The JMC directs the use of the Unified Form for business permit application. The JMC prescribes the five steps an applicant takes to get a business permit. The JMC likewise stipulates that these processes should be completed within five to ten days. These are the standards by which each municipality and city must comply with in serving its business constituents.

2. The Objective: Beyond the Standards

For any city or municipality to be competitive globally, one of the metrics used is the ease and speed in applying for a business permit. The cities that have been ranked high in this aspect are those that can process applications in a shorter period, with lesser requirements, lesser steps, and lesser signatories. These cities have been observed to use information technology to enhance their business licensing processes. It is the objective of this paper to present an online solution to business licensing with the judicious employment of current available technologies that have been ubiquitously used by the populace.

B. The Online BPLS for New Applicants

1. The Players

a. Business Registration: SEC, DTI, CDA

When a new business is to be set-up, the registering authorities are the Securities and Exchange Commission (SEC) for corporations, the Cooperative Development Authority (CDA) for cooperatives, and the Department of Trade and Industry (DTI) for sole proprietorships. These three agencies are now coordinating to consolidate all registered businesses under the Philippine Business Registry (PBR), led and developed by DTI. As of this writing only the data of DTI have been included in the PBR. Registration of sole proprietorship with the PBR is online. Eventually, SEC and CDA will upload their data with the PBR for sharing. Data on the PBR is shared with other government agencies mandated to provide services to business entities.

b. National Government Agencies: BIR, SSS, PhilHealth, Pag-Ibig

The business registrant is required to register with several National Government Agencies (NGAs), specifically, the Bureau of Internal Revenue (BIR), Social Security

System (SSS), Philippine Health Insurance Corporation (PhilHealth), and Home Development Mutual Fund (Pag-Ibig). Registration and compliance with the requirements of these NGAs will ensure that their business and their employees can avail of their benefits (social security, health benefits, housing benefits) and perform their obligations (taxes and duties) to the government. With the PBR data shared by DTI with these agencies, the business registrant will only be providing additional data about their companies to these NGAs. Their PBN (Philippine Business Number) and business registration data will be carried consistently throughout all government agencies.

c. Local Government Offices

In applying for a business permit, a business registrant normally will go to the following offices to comply with specific requirements:

- Business Permits and Licensing Office
- City Assessors' Office
- City Treasurer's Office
- City Executive's/Administrator's Office
- Barangay Office for Barangay Clearance
- City Planning / Zoning Office for Zoning Clearance
- City Health / Sanitation Office for Health Clearance of Employees
- City Environment Office for Environmental Clearance
- City Agricultural/Veterinary/Fisheries Office for specific requirements

The data that PBR will share with the LGU will allow the LGU to notify the business registrant to access the LGU's portal for business licensing. The LGU's BPLS will use these data to populate the Unified Form for business permit and licensing application when the PBN is entered online by the business registrant. With common data made available online via the BPLS, the registrant will only fill-in the additional data needed by the specific LGU offices. Required inspections will be conducted after registration, as scheduled by the BPLS. Inspection results will be entered into the BPLS later for the registrant to comply with, should findings be observed.

d. Bureau of Fire Protection

When the BPLS is linked to the BFP office, the shared data will allow the BFP to issue a separate official receipt for payments made by the registrant. Additional data may be entered by the registrant and the BFP, based on findings observed during the inspection after the registration.

2. Web-based Access of PBR

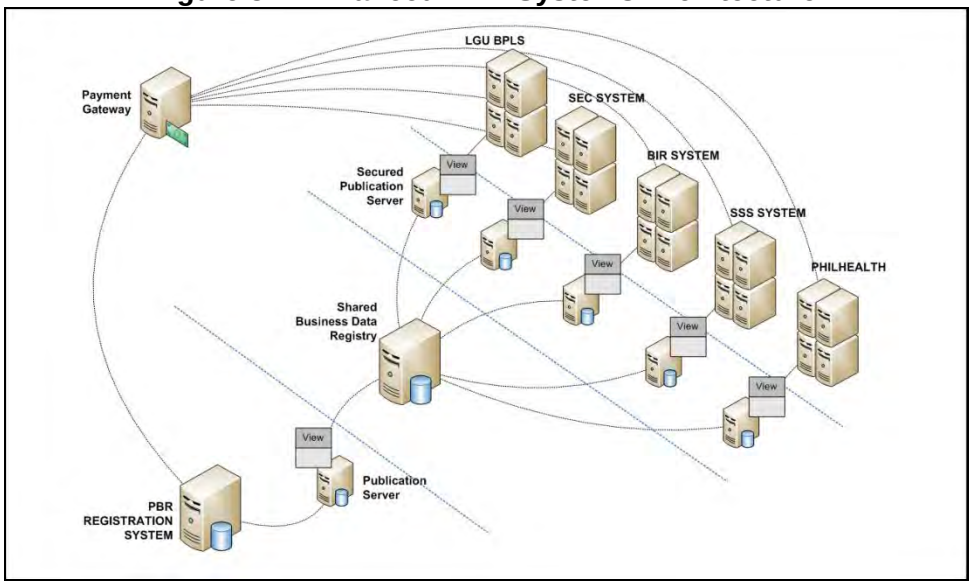
The PBR may be accessed online anywhere by entering the DTI portal. DTI also provides kiosks in their offices which registrants may use. The registrant will enter the data required by the PBR form. Payments can be made online via GCash and other online payment options.

Likewise, the registrant has the choice to get available PBR form at the DTI office or download the PBR form from the PBR website, then filling-up the form can be manually

done. When submitted to DTI, the filled-up PBR form will be encoded by the DTI personnel. Over-the-counter payments will be accepted by the DTI cashier.

The data gathered by the PBR are lodged in the DTI server and pushed for sharing with various NGAs as well as the respective LGUs where the business of the registrant is located. Figure 8 below is a diagram that shows the enhanced PBR Systems Architecture that will allow secure data sharing among NGAs as well as online payment processing for all involved NGAs and LGUs in the business registration process.

Figure 8. Enhanced PBR Systems Architecture



3. Web-Based Access of BPLS

The registrant is notified by the BPLS to access the LGU's portal and choose the button for BPLS application processing using the PBN given by the PBR. The data from the PBR would have been incorporated into the BPLS database, thus, populating the registrant's Unified Form as application for a business permit. The BPLS instructs the registrant to complete the registration process. The BPLS will give the registrant the option to enter additional data to the filled-up Unified Form or to download the Unified Form with forms from the other LGU offices for manual entry of data. The registrant may complete the application online or off-line.

4. Online Application

In the online application, the registrant will be presented with the filled-up Unified Form as received from the PBR. Certain fields maybe edited for correction. A multi-part form will be added to cover the additional data requirements of other LGU offices like the CTO, CAO, OBO, CP/ZO, CH/SO, CENRO, etc., including the barangay and the BFP. Entries to this form may be made online or off-line should the registrant opt to download the form for manual entry of data. For the online option, the registrant confirms the content of the Unified Form as well as enters the additional data for the BPLS multi-part form.

5. Online Submission of Documents, Actual Documents to Follow

Upon receipt of the confirmed Unified Form and the additional BPLS multi-part form, the system will compute for the fees that registrant will have to pay to every office requiring any processing charges for registration and inspection. The BPLS also notifies the registrant on the list of documents that need to be submitted to the BPLO to complete its validation and assessment. The registrant has the option to initially submit the scanned or photographed copies of the required documents, followed by mailing the true copies of the same or do away with online submission and instead, submit personally the required documents to the BPLO. Documents that are submitted online are routed to the respective offices that will process them.

6. Online Assessment and Payments

BPLS computes for the charges imposed by each LGU office involved in the business licensing process, including that of the BFP. The BPLS presents online the itemized fees that the registrants will pay for. The registrant has the option to pay online via GCash or other government accepted process for online payments or pay personally to the LGU's Treasurer. BPLS generates the financial reports on the fees and charges levied on the registrant vis-à-vis the services rendered by each of the LGU offices.

7. Online Receipt of Confirmation

Upon receipt of online payment, the BPLS will generate an official receipt that contains the breakdown of charges, reflecting the amounts due every LGU office, including that of the BFP's. BPLS generates the financial reports on the fees and charges collected from the registrants.

8. Online Notifications

The BPLS provides online notifications to the registrant on several instances:

a. Notice that the PBR information has been received and that the registrant may apply for a business permit online, inclusive of the process description to do so.
b. Notice of the total registration amount, inclusive of the breakdown of the fees and charges.
c. Notice of receipt of payment and online delivery of official receipt.
d. Notice of schedules of inspections, clinical examinations, release of documents.
e. Notice of results of inspections and instructions for compliance.
f. Notice of follow-thru to check if registrant has complied with the recommended procedures to correct the findings.
g. Notice of compliance to all requirements and approval of the business permit.
h. Notice of schedule of release of permit, plates, and stickers, if any.
i. Notice of schedule of renewals.

9. Online Receipt of Permit and Clearances

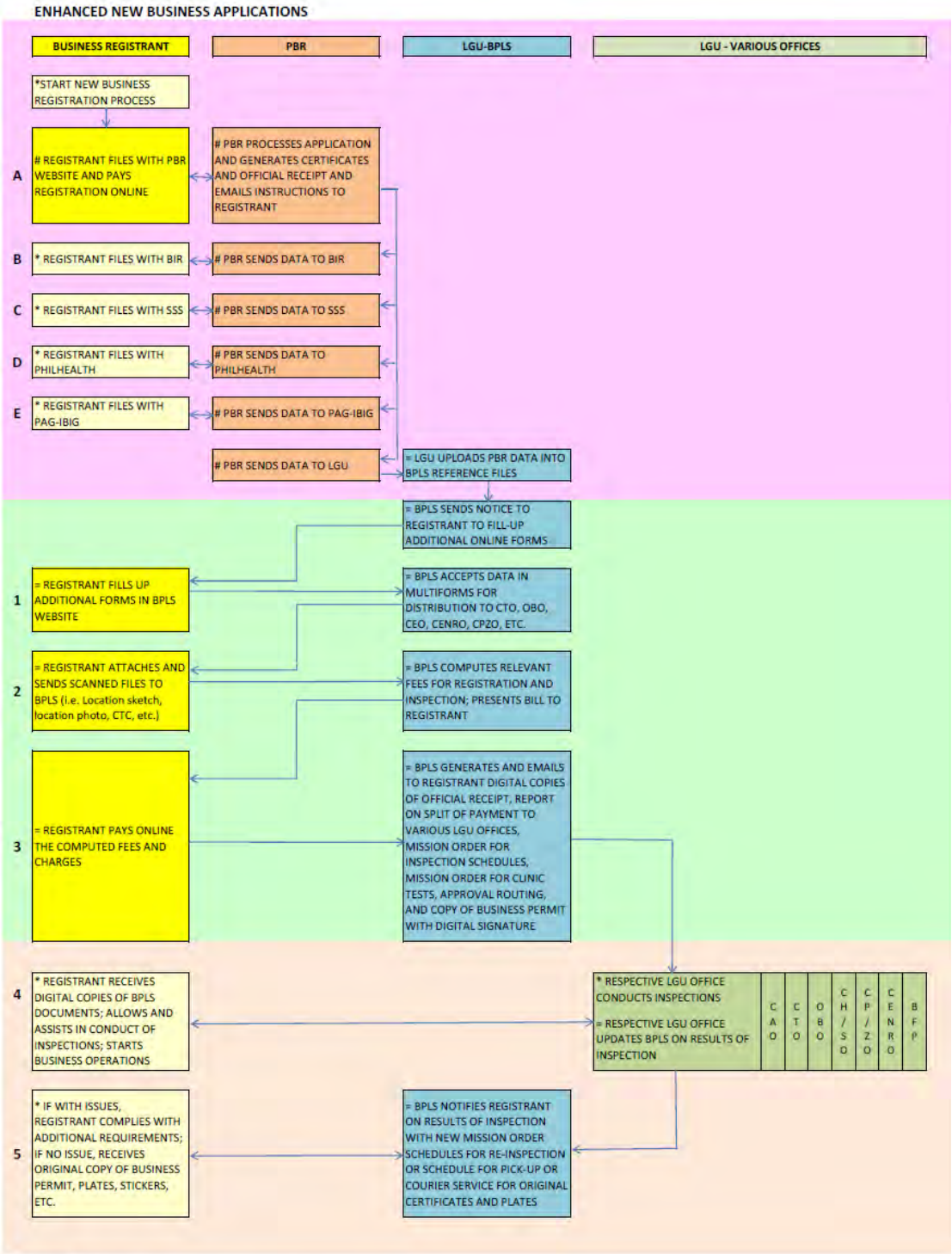
Upon receipt of notification for the release of a business permit with instructions on how to comply with other mandatory requirements, the registrant will be given options on the manner of its delivery: by courier, by mail, or by pick-up. Delivery may be conditional upon compliance based on the reported findings of inspection teams.

10. Actual Inspections

Based on the notification sent by BPLS confirming the schedules of inspection, the registrant and the LGU's inspectors will conduct the inspection onsite the business premises. Results of the inspection will be discussed with the registrant with the recommendations on how requirements can be complied with. The same results and recommendations will be entered into the BPLS so that monitoring may be done at a specified date. Updates on the status of compliance will be entered as confirmed by the inspection team.

Figure 9 below is a diagram that shows the online activities of a business registrant as well as the off-line processes that he will go through to complete the requirements of applying for a business permit.

Figure 9. Illustrative Activities a Business Registrant in an Online Registration System



Legend:

 # Part of Automated PBR System Process
= Part of Automated BPLS Process
*** Manual Process**

The Online BPLS for Renewal of Permits

1. Link to PBR

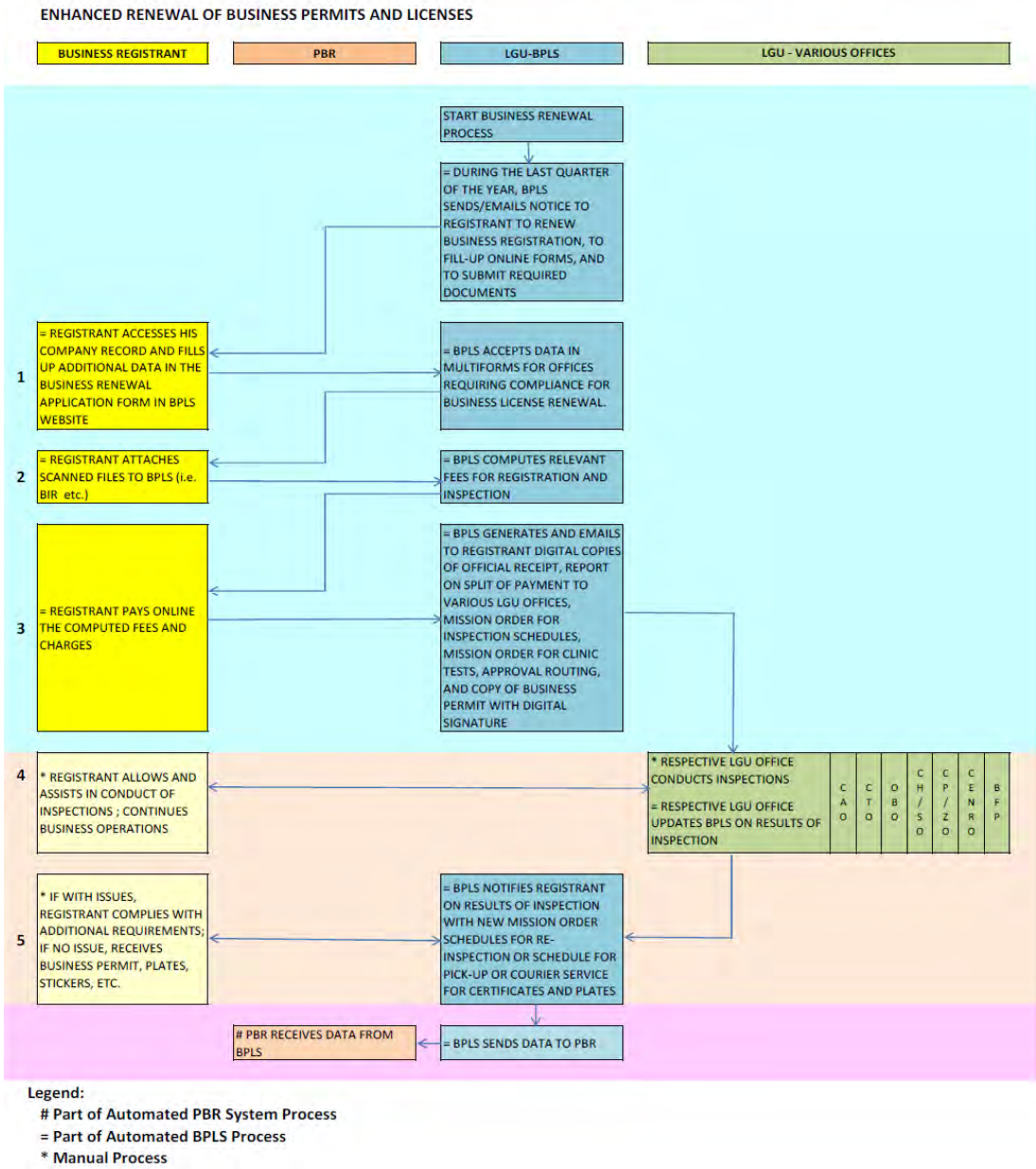
The renewal of business permits will follow a similar process as the application for new permits, except that no new information is expected from the PBR. On the other hand, the BPLS will generate a report for the PBR, providing updates on which businesses have been renewed on an annual basis.

2. Renewal Process

As in the new application for business permits, BPLS may be accessed via the LGU portal, renewal is online, submission of documents may be online, assessment and payment may be online, confirmation and generation of official receipts will be online, online notifications will be sent for schedules of inspection and requirements for compliance, delivery of actual permit and stickers may be by courier or pick-up, and actual inspections will be conducted after the renewed permits are released.

Figure 10 below is a diagram that shows the online activities of a business registrant as well as the off-line processes that he will go through to complete the requirements of renewing a business permit.

Figure 10. Illustrative Online Activities of a Business Registrant Renewing a Business Permit.



D. Requirements of an Online BPLS

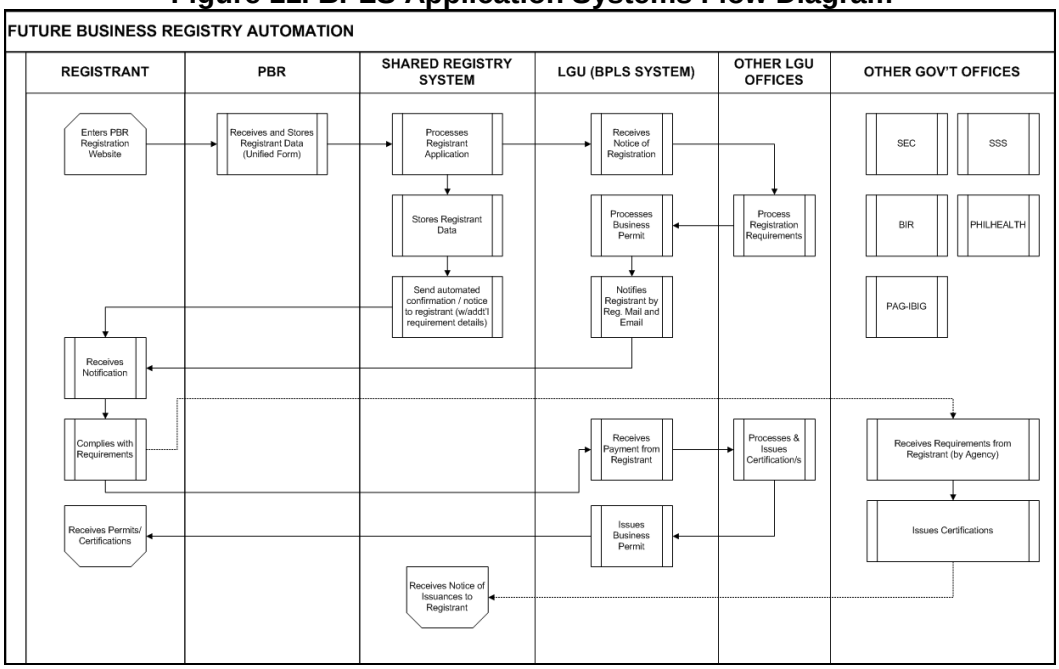
1. Applications Software

The Online BPLS may be developed from ground up as a customized system using the Baseline Design for BPLS as base design. To be added to that design is the link of BPLS to PBR as well as the integration of the processes of other LGU offices and BFP processes. The Online BPLS may also take off from existing BPLS packaged solutions with extensions to include the link to PBR and integration with other LGU offices as well as BFP. Both initiatives

may be done in-house or out-sourced by the LGU. Any of these BPLS solutions may be lodged in a private cloud and shared by many LGUs on a subscription basis.

Figure 11 below is a BPLS Application Systems Flow Diagram that integrates the processes of the LGU offices in the design and execution.

Figure 11. BPLS Application Systems Flow Diagram



2. Systems Software

The Online BPLS may be developed on a robust platform like Microsoft Windows, Oracle Solaris, various versions of UNIX, and various versions of open source Linux. The BPLS data may be organized and built-up using Microsoft SQL Server, Oracle RDBMS, or an open source RDBMS.

3. Hardware

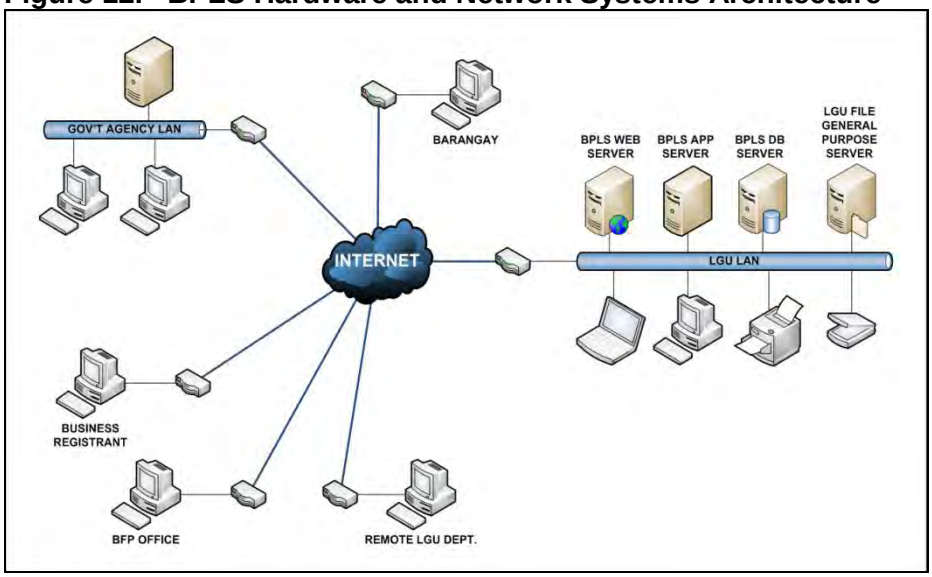
The hardware for Online BPLS will be multi-tiered. The following servers may be required: (1) a server to link with the PBR and download the data for the specific LGU; (2) a server to lodge the BPLS applications software,; (3) a server for the BPLS database; (4) a web-server for access by various users external to the LGU; and (5). A server for use by applications of other LGU offices interfaced with the BPLS. Every LGU office must be provided with workstations that can access the BPLS for updates on the BPLS. Proper sizing will be made per LGU based on the number of businesses, number of internal users, projected number of access and transactions.

4. Network and Internet

The Online BPLS warrants that the BPLO is connected to PBR, the other LGU offices, and its city constituents, the business registrant. It is imperative that the LGU is connected internally (wired or wireless) as well as externally, to the world, via its portal and website.

Figure 12 below is a diagram of BPLS Hardware and Network Systems Architecture connecting the LGU's BPLO with other LGU offices, Barangays, BFP, other NGAs, and the business registrant via a local area network (LAN) and the internet for its wide area network (WAN).

Figure 12. BPLS Hardware and Network Systems Architecture



5. Secure Systems

The Online BPLS will adopt various industry-accepted security solutions to ensure that systems and data are secured and processes are not compromised.

C. Policy Changes

Computerization will not be successful without the corresponding changes in policies that mandate how procedures and processes will flow and be executed. In considering an online BPLS, the LGU must develop policies that will allow and encourage an alternative approaches to applying and renewing business permits and licenses. These policies will cover online access to the BPLS from anywhere, online submission of digital copies of documents, online bills/fees assessment and presentment, online payment, payment acknowledgement via digital official receipts, online notifications and digital undertakings, and use of digital signatures for workflow and business permits approvals. These processes are allowed by law (R.A. 8792 or the E-Commerce Law of the Philippines).