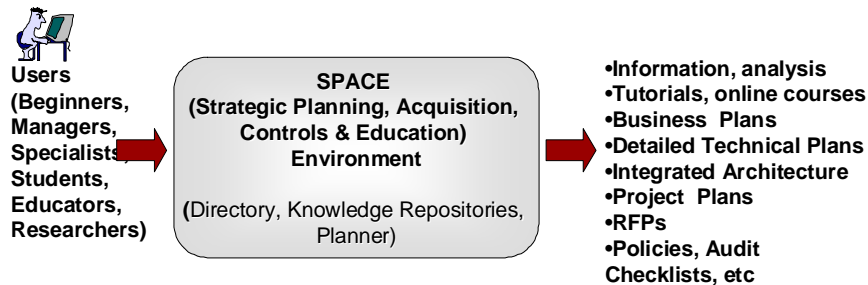**Draft**

Computer Aided Planning Environment

Frequently Asked Questions

Q1: What is the Planning Environment

The Computer Aided Strategic Planning, Environment helps the users launch and manage their egovernment and ebusiness initiatives without duplication of effort. The following figure presents a high level view of the Planning Environment. This Environment is currently part of the UN-GAID eNabler Project and thus fully supports, but is not restricted to, the MDGs (Millennium Development Goals).
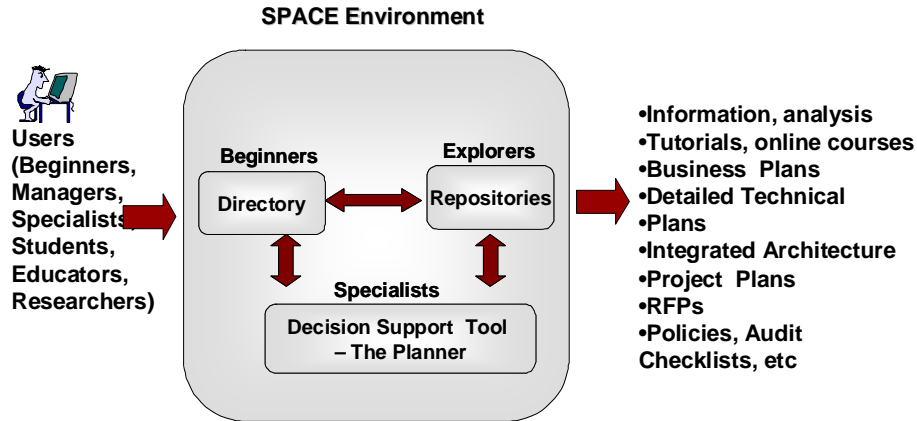
Users
(Beginners,
Managers,
Specialists,
Students,
Educators,
Researchers)

SPACE
(Strategic Planning, Acquisition,
Controls & Education)
Environment

(Directory, Knowledge Repositories,
Planner)

•**Information, analysis**
•**Tutorials, online courses**
•**Business Plans**
•**Detailed Technical Plans**
•**Integrated Architecture**
•**Project Plans**
•**RFPs**
•**Policies, Audit**
Checklists, etc

Key Characteristics:
•**Advanced Website with intelligent decision support capabilities**
•**Currently provides 50+ services in eGovernment, eHealth, eLearning,**
  eBusiness, eCommerce, e-Welfare and others
•**Extensive international support (information about 200 countries)**
•**Supports informational, transactional and realtime services**
•**Based on latest thinking in AI (artificial intelligence) and patterns**
•**Supports a computer aided consulting model**

Q2: What does the Planning Environment do

The Planning Environment is a "one-stop shop" that attempts to support the entire Learn-Plan-Do-Check cycle. This Environment, as shown below, that provides extensive informational, educational and management resources by using a) a Directory for beginners, b) a set of Knowledge Repositories for the explorers and c) a Planner for the specialists. Specifically:

- The users can range from beginners to specialists who can use the Directory for quick reference, the Knowledge Repositories for educational materials and case studies, and the Decision Support Tool (The Planner) for systematic guidance though a complete Learn-Plan-Do-Check process. .
- The users select a service from the healthcare, education, economic development, and public welfare sectors for a particular country and quickly produce very detailed and highly customized plans and informational resources as shown in the following figure.
- This Environment supports the users through the entire Learn-Plan-Do-Check cycle instead of focusing on one aspect only. Designed for developing countries and developing segments of developed countries, this Environment is being used very effectively to educate as well as assist the governments and NGOs (Non Government Organizations) of developing countries to accelerate progress in a large number of e-initiatives.

SPACE Environment

Users (Beginners, Managers, Specialists, Students, Educators, Researchers)

Beginners — **Directory**
Explorers — **Repositories**
Specialists — **Decision Support Tool – The Planner**

- Information, analysis
- Tutorials, online courses
- Business Plans
- Detailed Technical
- Plans
- Integrated Architecture
- Project Plans
- RFPs
- Policies, Audit Checklists, etc

Q3: How does the Planning Environment Support the Learn-Plan-Do-Check Cycle
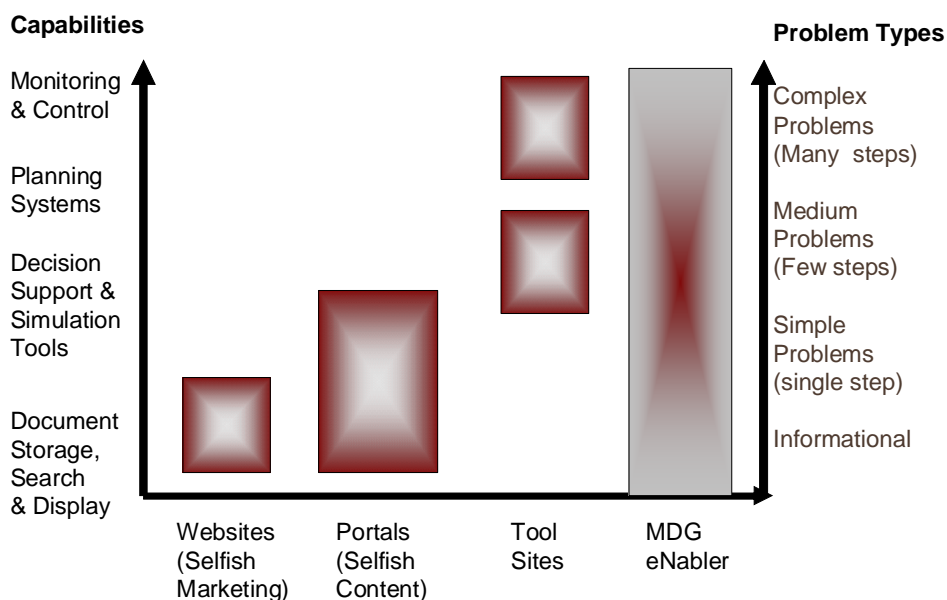
The Lean-Plan-Do-Check cycle, displayed in the following figure, has been used for several years to develop new systems and improve the existing ones. The idea of **Lear**n what needs to be done, **Plan** how to do it right, **Do** whatever needs to be done, and **Check** to see if it is done right is common in disciplines such as continuous quality improvements. The SPACE Environment supports the users through the entire Learn-Plan-Do-Check cycle by using the following capabilities:

- **The Directory** (the core) provides a quick reference and overview of the Environment for the beginners
- **The Knowledge Repositories** (the middle circle) expose the users to educational materials, case studies, and examples needed throughout the cycle
- **The Decision Support Tool -- The Planner** (the outer circle) goes beyond documents and actually walks the users through various decisions in strategic planning, acquisition, controls and education/training.

Q4: Why is the Planning Environment needed and how is it different from other Websites

Our goal is to go beyond the websites that contain marketing materials or portals that serve as document repositories with search capabilities or software development sites that house a collection of disconnected tools. Instead of duplicating existing websites and portals, we aim to provide a comprehensive set of capabilities that cover the entire "Learn-Plan-Do-Check" cycle to solve a wide range of problems (see the following figure). The capabilities, as shown on the left side of the figure, range from simple document search and display tools to planning and control services. These capabilities are needed to deal with simple informational queries to complex problems with many steps (shown on the right side of the figure).

Capabilities

- Monitoring & Control
- Planning Systems
- Decision Support & Simulation Tools
- Document Storage, Search & Display

Websites (Selfish Marketing) — Portals (Selfish Content) — Tool Sites — MDG eNabler

Problem Types

- Complex Problems (Many steps)
- Medium Problems (Few steps)
- Simple Problems (single step)
- Informational

The unique features of the Planning Environment are: :

- It is specifically designed for underserved segments – our main area of focus
- It is intended for a global marketplace – we capture almost 80 parameters about 200 countries and use these parameters to create highly customized and detailed plans.
- It addresses the entire Learn-Plan-Do-Check cycle and produces a very detailed planning report that can be used as a very effective checklist
- Use of the Environment results in significant reduction of time (from 4-5 months to 2-3 days) and rapid replication of best practices and standardized operations throughout its user community
- It is very customer focused – almost all of our services provide high impact (e.g., mobile health clinics, information exchange between agencies, entrepreneurship and educational networks)

Q5: How is the Planning Environment used in practice

Most of the developing countries are re-inventing the wheel in their efforts to launch egovernment initiatives. For example, an official involved in launching an eservices for healthcare faces many questions: "how do I understand the basic issues, policies, and approaches", "how do I develop a customized plan that is specific to my country", "how do I successfully execute the developed plan", "how do I monitor and evaluate the progress being made", and "how do I do everything without re-

inventing the wheel - what tools and solutions are available out there that I could use?" The official wonders if there is a "one-stop shop" where one could find answers to all such questions. The eNabler provides such a one stop-shop where a user can discover, plan, and manage services such as the following:

- online course delivery
- an entrepreneurship portal
- a health information network
- an emergency response unit to be used by a city government
- document exchanges between different government agencies
- broadband network
- social network for government services

The key player is the Planner that covers five phases (P0 to P4), shown in the following figure. The first two phases (P0 and P1) capture country and service specific information. Phase 2 generates a customized plan based on P0 and P1. P3 supports execution of the plan and phase P4 supports monitoring and control with heavy emphasis on project management and quality controls. The Planner generates extensive reports that include project plans, requirements documents, technical specifications, and RFPs (Request for Proposals). These reports contain a mixture: of generic and customized information. The generic information captures common best practices (e.g., security), the country/ region specific information is customized by using the factors published by the World Economic Forum (www.weforum.org), and service specific information by using business patterns.
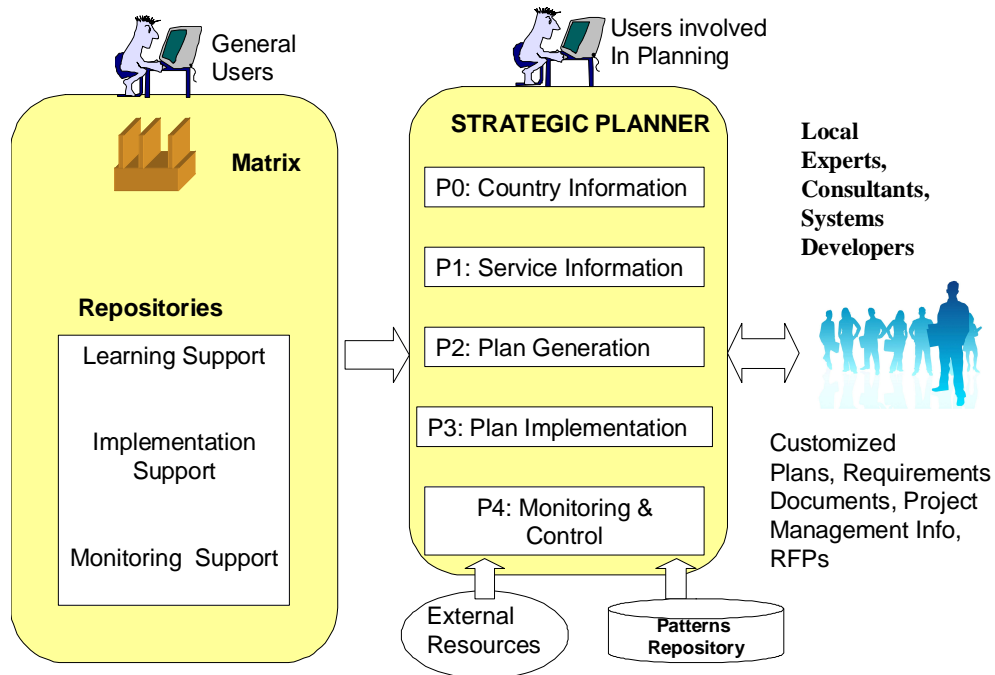
## Q6: How will the needed content be created and updated quickly

We heavily use patterns to create content quickly. Simply stated, a pattern represents core knowledge that can be specialized for different situations. Thus instead of loading the data for governments of almost 200 countries, we represent the core knowledge that is common to all governments. For example, the folloing diagram shows a "Government Pattern" that, once created, can be customized and specialized for

4

different countries. Patterns are quite useful because they represent a common library of artifacts that experienced professionals are likely to see over and over again.

To update the data quickly, we user learing techniques. For example, instead of manually gathering and maintaining the information, we employ intelligent agents that retrieve data and update when needed. At the core of STRAP is an extensive knowledgebase (KB) that contains best practices, patterns, and rules needed to address various areas of interest in education, healthcare, and economy. A great deal of literature on patterns and intelligent decision making has been published (see refernces below).

References:

[1] Adams, J., et al, *Patterns for e-Business: A Strategy for Reuse*, IBM Press, October 2001.
[2] Umar, A., "Intelligent Decision Support for Architectures and Integration of Next Generation Enterprises ", *Informatica*, V. 31, No. 14, pp. 141-150., 2007
[3] Umar, A., and Zordan, A., "Enterprise Ontologies for Planning and Integration of eBusiness", *IEEE Transactions on Engineering Management*, May 2009, Vol. 56, No. 2, pp. 352-371.
[4] Umar, A. and Zordan, A., "Integration Versus Migration Issues in Service-Oriented Architectures", *Journal of Systems and Software*, Vol. 28, 2009b, pp. 448-462.
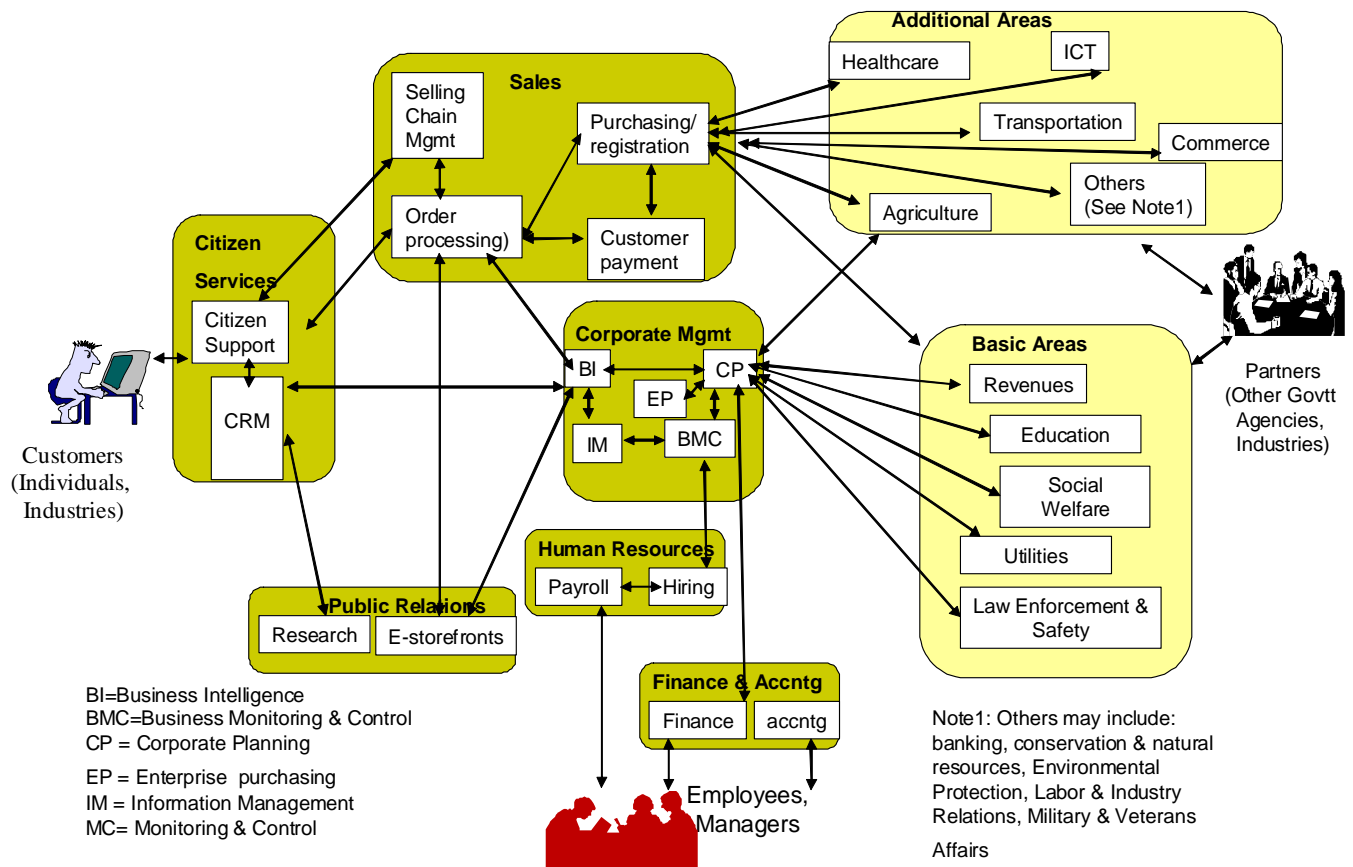
Q7: How will the plan generated be checked and maintained for quality

The Planner generates extensive reports that include project plans, requirements documents, technical specifications, and RFPs (Request for Proposals). These reports contain a mixture: of generic and customized information that is based on best practices and standards. This adherence to standards assures

the quality of the plans generated. To assure further accuracy, the outputs of the planner are reviewed by local experts.   These experts check and verify the content of the outputs before use.   .

The Strategic Planner uses a wide range of tools, techniques and standards in all phases, as shown in the following table. The main phases of the planner (P0, P1, P2, P3, P4) are displayed in column 1, the main activities (steps) in each phase are shown in column 2, and the main tools, techniques, and standards used in each step are listed in column 3.

Planning Phases	Activities Performed	Tools, Techniques & Standards Used
P0 (Government Modeler) Choose a Country and create a Government Pattern	S1: Define the country Profile and specify the level of use for the ICT	Fetch and use various indicators from sources such as World Economic Forum, UNPAN, ITU
	S2: Create a government pattern for the chosen country	Use the Patterns Repository to fetch and display a generic government pattern
	S3: Customize the pattern based on user inputs	Defaults for the patterns are based on external data sources
P1 (Initializer): Choose an Area (Domain) and Do Information Gathering	S1; Define a service in different areas that support the MDGs (e.g., healthcare, education, economic development)	The services are based on the government pattern and use the ITIL ITIL (IT Infrastructure Library: www.itil-officialsite.com
	S2: Get general information, educational resources and best practices	Extensive literature from diverse sources is accessed and displayed.
	S3: Do a self assessment of the PMO (present method of operation) and FMO (Future Method of Operation)	Uses the Capability Maturity Model (CMM) measures (0 to 5) for assessment.
P2 (Strategic Planning): High Level Planning (Management Focus)	Cost-benefits tradeoffs	Uses the McFarland Model
	Strategic analysis (buy, rent, outsource)	Uses an intuitive decision model based on time, in-house expertise,
	Policies and procedures needed for the service	Policies from different sources are fetched and displayed. Oracle Policy Automation
	Business processes needed	The Open Group Architecture Framework (TOGAF), Zackman model and US-FEA (Federal Enterprise Architecture)
	Technologies (apps, platforms, networks)	OAG (Open Application Group -Website: www.oag.org, TOGAF, W3C (www.w3c,org), Cisco guidelines
	Security & business continuity planning	SSI (System Security Institute), and ISO 9000 (for quality mgmt)
	Project Management & Governance	PMBOK (Project Management Book of Knowledge) by Proj Mgmt In.(PMI) COBIT (Control Objectives for Information), CMMI (Capability Maturity Model Integration)
	Interoperability and Integration	SOA, SPOCS(large European initiative for

	Considerations	interoperability – http://www.eu-spocs.eu/)
P3 (Detailed Planner): (Technology Focus) -- Through Simulations	Consolidated Report that shows: - Summary of the interactions - Requirements (RFP) format - Standards used (with explanations)	Requirements document is based on IIBA ((International Institute of Business Analysis): Website: www.theiiba.org
	Detailed Planning & Implementation Tools	Games, simulations, planning tools,
P4: Monitoring and Control (Quality Focus)	Detailed project management for monitoring and controls with quality focus	PMBOK (Project Management Book of Knowledge) by Proj Mgmt In.(PMI) COBIT (Control Objectives for Information), CMMI (Capability Maturity Model Integration)

Q8: How will the security of the Data be managed

The eNabler is offered as a SaaS (Software as a Service) model where the users access the remotely located eNabler through a Web Browser. Most of the eNabler resources areinformational and do not require any ID-Pw. However, the Planner is ID-PW protected to allow users to develop their own private plans. Users of the Planner have the following options, displayed below:

- **Option 1 (ID-PW Only):** The remotely hosted data is only accessed by the user with appropriate ID-PW.
- **Option 2 (ID-PW Plus Encrypted Data):** The remotely hosted data is also encrypted so that it can be only accessed by the user with appropriate ID-PW and encryption key. This option protects the remotely hosted data to be compromised.
- **Option 3 (ID-PW Plus Encrypted Data Plus Local Data): In addition to the** remotely hosted data that is encrypted and also ID-PW protected, this option allows the highly sensitive data to be only reside at the user site. This option assures that the sensitive data is not stored remotely and is only available at the user site. .
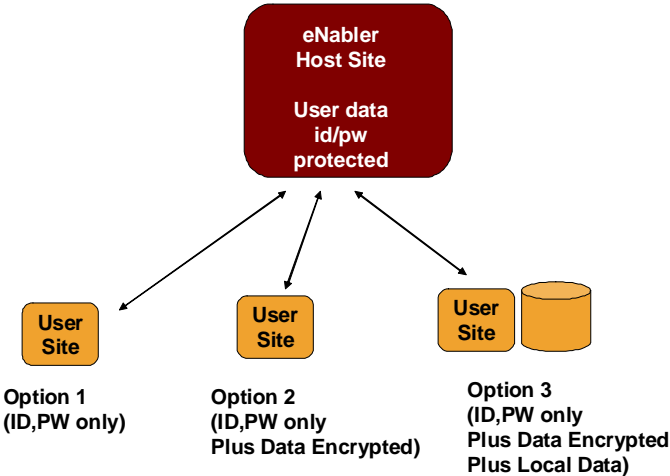

Q9: How can a larger system be developed from smaller ones

The Planner can be used to represent large and more complex services that include multiple agencies and organizations. The Planner provides a "Composer" that takes different scenarios and services and composes them into larger and more complex services such as the following (see figure):

- A document exchange s between different government agencies
- A B2B marketplace with numerous buyers and sellers
- A supply chain system consisting of several consumers and suppliers
- A government/business network such as a health information network (HIN)

The Planner treats each service developed in a session as an individual service (a reusable component) and composes large and complex services from these components by using SOA (Service Oriented Architectures). It handles the integration and interoperability between systems and suggests approximate configurations with details about the infrastructure components needed. The type of configurations and infrastructure components needed depend on the organizational composition and other parameters such as the number of participants (organization units), volume of transaction handled by the composition, value of transactions handled, security and trust level between the partners, etc. For example, the collaboration between partners in a supply chain require higher security than units of a large organization.
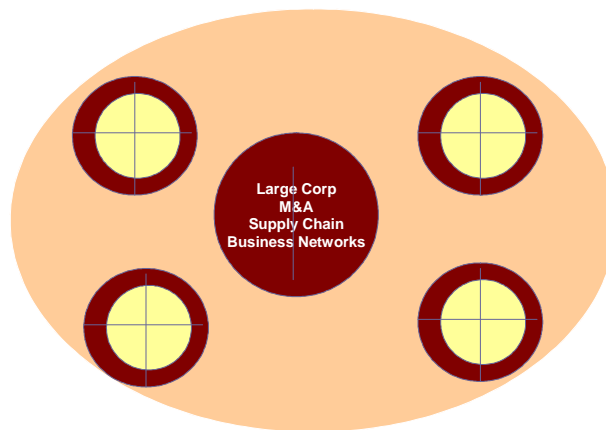
Q10: What will be the Governance Structure for the MDG eNabler

Proper governance is needed to define the roles and responsibilities of various players (e.g., UN, government agencies, international organizations such as the Red Cross, inter-governmental agencies, private sector, NGOs and the Civil Society) . We are in the process of developing the most appropriate governance.

Q11: How will we assure the success of the Planning Environment and what type of approaches will be used

The eNabler (its content plus its tools) will be heavily user centered. We will use a "User Centered" design approach, thus the users will drive the eNabler and assure its success. We will aggressively use a continued quality improvement approach that goes through the quality planning, quality assurance and quality control iterations on a regular basis (see the figure below). More information on this topic can be found in the literature (see reference below).

Reference: "Project Quality Management: Why, What and How", by Kenneth H. Rose, Publisher: J. Ross Publishing (June 29, 2005