IT-Business Alignment: Part II

Effectively aligning IT Systems to your Business Operations

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Contents

Appendix 1: EA Policy

An EA policy, at a minimum, should include:

1. Description of the purpose and value of an EA
2. Description of the relationship of the EA to the company's strategic vision and plans
3. Translation of business and IT strategies into EA goals, objectives, and strategies
4. Commitment to develop, implement and maintain an EA
5. Security practices as regards EA access and updates
6. Backup procedures as regards the software, control and data elements of your EA
7. Appointment of the Chief Enterprise Architect and establishment of an EA core team

Appendix 2: Other EA Support Roles

1. **Corporate Quality Assurance Manager**: This person ensures quality of all enterprise architecture products and participates in enterprise architecture working sessions and reviews.

2. **Corporate Risk Manager**: This person identifies, monitors, controls, and takes action to mitigate your EA process risks. The responsibilities of the corporate risk manager, in general terms, are to:

    1. Develop, initiate, maintain, and revise policies and procedures for the general operation of the risk assessment function.
    2. Run and manage the day-to-day operation of the risk function by maintaining the Risk Register and the company's risk plan which may also include a description of contributing factors and avoidance approaches for each risk, as well as general guidance on how to react swiftly to risk events to help control damage.
    3. Develop, implement and periodically review and update the organization's risk management policies and procedures to ensure continuing currency and relevance in providing risk guidance to management and employees.
    4. Identify and monitor risks that could be applicable to the organization.
    5. Ensure proper reporting of all actions to prevent or avoid actual or potential risks to higher levels of management, including the board and to duly authorized enforcement agencies as appropriate and/or required.

3. **Business Process Experts**: Experts from within each business function of the company (one from each business unit) to assist and the support your EA staff.

4. **IT Experts**: These are the more classical IT support roles, such as: Data base administrator, system programmer, business analyst, computer programmer, IT manager, etc., who develop and maintain the IT Systems of your company.

The summary responsibilities of these IT support roles are described next. More details about these and other IT controls are contained in my book **'IT Strategic & Operational Controls'** (ISBN: 978-1-84928-061-7, Direct Link: www.itgovernance.co.uk/products/3066).

4.1. Data Base Administrator: The responsibility of a Data base Administrator (DBA), in summary, includes:

a) Controlling the subschema of the data base,
b) Implementing access controls to individual programs updating the organizational data bases,

c) Maintaining the integrity of the data base environment,
d) Implementing the data ownership and data deletion procedures,
e) Monitoring data documentation standards, setting up and
f) maintaining the data dictionary, and setting standards of data backup and recovery.

4.2. Systems Programmer: The System Programmer, in summary, provides system-level support of multi-user operating systems, hardware and software tools, including installation, configuration, maintenance, and support of these systems, researching, planning, installing, configuring, troubleshooting, maintaining and upgrading operating systems, network and data base software, etc., of the organization.

4.3. Business Analyst: The Business Analyst, in general terms, studies and identifies the overall business and information needs of the organization in order to develop and specify solutions to business problems by the use of IT technology solutions.

4.4. Computer Programmer: The Computer Programmer, in summary, performs a variety of computer programming assignments including coding, testing, maintaining, modifying and troubleshooting computer programs utilizing the appropriate computer hardware, database, and computer programming technology of the organization.

4.5. IT Manager: The IT Manager, in general terms, provides technology vision and leadership in the development and implementation of the Information Technology (IT) investments of the organization. He or she will also lead the organization in planning and implementing enterprise information systems to support both distributed and centralized production and business operations and achieve more effective and cost beneficial enterprise-wide IT operations.

Appendix 3: EA Frameworks

The most common industry-standard EA Frameworks are briefly presented next.

The Zachman Framework

This framework (www.zachmaninternational.com), provides a formal and well-structured way of viewing and defining an enterprise on the basis of a two dimensional classification matrix. Each row represents a type of stakeholder, these being: contextual, conceptual, logical, physical, and detailed. Each column denotes the aspects of the architecture, such as: 'Why' (represents the motivation), 'How' (denotes the functional description), 'What' (represents the data description), 'Who' (represents the people), 'Where' (denotes the network), and 'When' (defines the time).

The resulting matrix is a template that must be filled in by the goals, rules, processes, material, roles, locations and events specifically required by the organization.

The Open Group Architecture Framework (TOGAF)

This framework (http://www.opengroup.org/togaf/, and TOGAF® Version 9.1 Enterprise Edition Document, available at: http://www.togaf.info/) provides a comprehensive approach to the design, implementation, and governance of an enterprise information architecture at four levels or domains: Business Domain (business strategy, governance, organization,, and key business processes), Applications Domain (blueprints for the individual application systems to be deployed and their interactions), Data Domain (logical and physical data assets), and Technology Domain (hardware, software, and network facilities required to support the deployment of core and mission-critical applications).

The three typical levels of data models are: conceptual, logical and physical. The complexity increases from conceptual to logical to physical. This is why one always starts with the conceptual data model (which contains high level entities and their entity relationships), then moves on to the logical data model (which contains in addition to entities and their relationships, attributes, and primary and foreign keys of the data), and finally the physical data model (which contains primary and foreign keys, and their implementation particulars, such as: table names, column names, and column data types, etc.), before the data model is implemented in a particular database.

Enterprise Architecture Body of Knowledge (EABOK)

This is a guide to enterprise architecture produced by MIT (as per http://www.mitre.org/work/tech_papers/tech_papers_04/04_0104/04_0104.pdf). It treats enterprise architecture as not including merely diagrams and technical descriptions, but gives a holistic view that includes U.S. legislative requirements and guidance, as well as giving technologists a better understanding of business needs on the basis of the value chain concept of Professor Porter (as per Porter, Michael (1985) Competitive advantage, creating and sustaining superior performance. Free Press).

Generalized Enterprise Reference Architecture and Methodology (GERAM)

This is a generalized enterprise architecture framework (as per www.nist.gov, and Report on GERAM by J.G.Nell (2006) www.mel.nist.gov.) for enterprise integration and business process engineering. It defines the enterprise related generic concepts recommended for use in enterprise integration projects. These concepts include: a life cycle approach in identifying the life-cycle phases for any enterprise (from entity conception to its final end), enterprise entity types and enterprise modelling with business process modelling, integrated model representation in different model views, and modelling languages for different users, such as business users, system designers, IT modelling specialists, etc.

Reference Model of Open Distributed Processing (RM-ODP)

This framework (as per (1) www.rm-odp.net/publications.html, (2) The ITU-TX.950, 952, 920, 931, 960, 910, 911, and corresponding ISO/IEC standards, and (3) The ISO/IEC 19500-2:2003 ORB Protocol.) supports distribution, inter-working, platform and technology independence, and portability, together with an enterprise architecture framework for the specification of open distributed processing systems. It provides five generic and complementary viewpoints on the system and its environment: enterprise viewpoint, information viewpoint, engineering viewpoint, computational viewpoint, and technology viewpoint.

The CIMOSA Framework

CIMOSA is a well known framework (as per http://www.cimosa.de/) which supports all phases of the CIM (Computer Integrated Manufacturing) system life-cycle from requirements definition, through design specification, implementation description and execution of the daily enterprise operation.

CIMOSA incorporates an event-driven, process-based modelling approach with the goal to cover essential enterprise aspects in one integrated model. The main aspects are the functional, behavioural, resource, information and organizational aspect.

Federal Enterprise Architecture (FEA) Framework

The FEA framework is a U.S. Government standard (as per http://www.gao.gov/assets/590/588407.pdf) which is used to facilitate shared development of common processes and information among U.S. Federal agencies and other government agencies.

On the basis of this framework, a given architecture can be partitioned into four layers, as depicted next.

Layer 1: Business Architecture. Represents the business functions of the organization and the information it uses.

Layer 2: Data Architecture. Defines how data are stored, managed and used in a system.

Layer 3: Application Architecture. Consists of the logical systems that manage the data in the data architecture and support the business architecture.

Layer 4: Technology Architecture. Describes current and future infrastructure (hardware and software) that support the application systems in the application architecture.

Other Government Enterprise Architecture Frameworks

There is a set of various other government sponsored enterprise architecture frameworks, such as the ones listed below, which are beyond the scope of this paper. These are:

1. Department of Defense (U.S.) Architecture (cio-nii.defense.gov and (2) architectureframework.com/dodaf),
2. NIST (U.S.) Enterprise Architecture Model (www.faa.gov, www.fdicoig.gov, www.nist.gov),
3. British Ministry of Defense Architectural Framework (www.modaf.org.uk)
4. The NATO Architecture Framework (www.nhqc3s.nato.int/archirecture), and
5. Government Enterprise (Australia, Queensland) Architecture (www.qgcio.qld.gov.au).

ITIL Enterprise Architecture Framework

This framework is based on the Information Technology Infrastructure Library (ITIL) which contains a set of concepts and policies for managing Information Technology (IT) infrastructure, development and operations.

ITIL includes five core components: Service Strategy, Service Design, Service Transition, Service Operation, and Continual Service Improvement.

Service Strategy: Service strategy encompasses a framework to build best practice in developing a long term service strategy. It covers many topics including: general strategy, competition and market space, service provider types, service management as a strategic asset, organization design and development, etc.

Service Design: The design of IT services includes design of architecture, processes, policies, documentation, capacity management, IT service continuity, Information Security, supplier management, key roles and responsibilities of staff and future business requirements, etc.

Service Transition: Service transition covers topics such as: Service Asset and Configuration Management, Transition Planning and Support, Release and deployment management, Change Management, etc.

Service Operation: Service Operations include monitoring of problems and balance between service reliability and cost, balancing conflicting goals, Event management, incident management, problem management, etc.

Continual Service Improvement (CSI): The goal of Continual Service Improvement is to align and realign IT Services to changing business needs by identifying and implementing improvements to the IT services that support the Business Processes.

For more details, see: (1) APMG (2008): ITIL Service Management Practices. www.itil-officialsite.com, www.ogc.com., and (2) Office of Government Commerce (2000). Service Support. The Stationery Office.

Microsoft Enterprise Architecture Framework

This EA framework (as per Microsoft® Operations Framework: microsoft.com/technet/SolutionAccelerators) is based on the IT Service Lifecycle approach of 4 phases:

1) The Plan Phase. The activities of this phase ensure that your IT services are planned effectively so that they are implemented successfully.
2) The Deliver Phase. The activities of this phase ensure that your IT services are developed effectively, are deployed successfully, and are ready for Operations.
3) The Operate Phase. The activities of this phase ensure that your IT services are operated, maintained, and supported in a way that meets your business needs and expectations.
4) The Manage Layer. The activities (IT governance, risk, compliance, roles and responsibilities, change management, configuration, etc.) of this phase provide operating principles and best practices to ensure that your IT investments deliver expected business value at an acceptable level of risk.

Appendix 4: Business Process Narrative

An example of a business process narrative for an accounts payable function follows next.

Step 1. Check credit card statements.

Step 2. Apply limitations on the amount that can be charged to keep an employee within spending limits.

Step 3. Verify authorizations with a three-way match of the purchase order, invoice, and receiving report.

Step 4. Review additions to the computerized vendor file. Have someone not associated with accounts payable review all additions to the master vendor file to avoid payments to fictitious vendors.

Step 5. Get approval on all invoices that do not have a purchase order from a supervisor.

Step 6. Approve all expense statements before payments are made.

Step 7. Make payment.

Appendix 5: Business Plan

The contents of a business strategic plan are:

1. Executive summary,
2. Business model, mission, vision, and values statements,
3. Critical success factors for the accomplishment of the plan,
4. Product / service idea,
5. Business goals, strategies and specific objectives,
6. Break-even analysis and market analysis,
7. Action plans,
8. Management team,
9. Analysis of risks,
10. Financing and cash-flow projections,
11. Strategic initiatives and resources plan, etc.

Appendix 6: Strategy Assessment Methods and Tools

The following methods and techniques may be utilized for the analysis, assessment and evaluation of strategy of ant type of organization. The evaluator may use only one method, or more than one, depending on his (or her) experience and situation.

These methods and techniques are: SWOT analysis, PEST Analysis (also known as PESTLE Analysis), Gap Analysis, Portfolio analysis, Value chain analysis, Delphi Method, Life cycle analysis, Screening strategic options, Financial analysis, Scenario planning, Critical success factor analysis, The five forces, Directional Policy Matrix, and Competitor Analysis.

These are described next.

SWOT analysis

The SWOT analysis (strengths, weaknesses, opportunities, threats) is one of the most popular. This involves looking at the strengths and weaknesses of your business' capabilities, and any opportunities and threats to your business.

Once you've identified all of these, you can assess how to capitalise on your strengths, minimise the effects of your weaknesses, make the most of any opportunities and reduce the impact of any threats.

It's important to remember that opportunities can also be threats – for example, new markets could be dominated by competitors, undermining your position. Equally, threats can also be opportunities – for example, a competitor growing quickly and opening a new market for your product or service could mean that your market expands too.

A SWOT analysis can provide a clear basis for examining your business performance and prospects. It can be used as part of a regular review process or in preparation for raising finance or bringing in consultants for a review.

Once you have collected information on your organisation's internal strengths and weaknesses, and external opportunities and threats, enter this data into a simple table.

PEST Analysis (also known as PESTLE Analysis)

PEST analysis is concerned with the environmental influences on a business. The acronym stands for the Political, Economic, Social and Technological issues that could affect the strategic development of a business.

Some possible factors that could indicate important environmental influences for a business under the PEST headings are: Environmental regulation and protection, Economic growth, Income distribution, Government spending on research, Taxation, Monetary policy, Demographics, Government and industry focus on technological effort, International trade regulation, Government spending, Labour and social mobility, New discoveries and development, Consumer protection, Policy towards unemployment, Lifestyle changes, Speed of technology transfer, Employment law, Taxation, Attitudes to work and leisure, Rates of technological obsolescence, Government organization and attitude, Exchange rates, Education, Energy use and costs, Competition regulation, Inflation, Fashions, Changes in material sciences, Stage of the business cycle, Health & welfare, Impact of changes in Information technology, Economic "mood" and consumer confidence, Living and housing conditions, Internet, etc.

Gap Analysis

Gap Analysis is a method used extensively in the process of designing the strategy of an organization. With the use of this method, the gaps between the present situation and the desired state are defined, in terms of processes, procedures, technology, systems, human resources, infrastructure and organizational structure.

The steps to achieve this are:

1. Selection of basic quality and quantity criteria,
2. Definition of desired future performance position,
3. Measurement of current performance,
4. Recognition of the gaps between the existing and the future desired position, and
5. Designing and executing a strategy to achieve the desired position by bridging all the defined gaps, and by improving the processes, procedures, technology, systems, human resources, infrastructure and organizational structure.

Portfolio analysis

Analysis of the balance and compatibility of an organizatio n's strategic business units strategies within a larger corporate setting, in terms of market share, growth rate, more investing, product growth etc.

Value chain analysis

A systematic way of examining all activities within and around the organization, such as: purchasing inputs, human resources, designing products, delivering and supporting products, and relating them to an analysis of the competitive strength and advantage of the organization.

Value Chain Analysis describes the activities that take place in a business and relates them to an analysis of the competitive strength of the business. These activities are:

1) Primary Activities – those that are directly concerned with creating and delivering a product (e.g. component assembly); and
2) Support Activities, which whilst they are not directly involved in production, may increase effectiveness or efficiency (e.g. human resource management). It is rare for a business to undertake all primary and support activities.

What activities a business undertakes is directly linked to achieving competitive advantage.

Value chain analysis can be broken down into a three sequential steps:

1) Break down a market/organization into its key activities under each of the major headings in the model,
2) Assess the potential for adding value via cost advantage or differentiation, or identify current activities where a business appears to be at a competitive disadvantage, and
3) Determine strategies built around focusing on activities where competitive advantage can be sustained.

Delphi Method

Assessment of whether a strategy is likely to be correct or needs change, improvements, etc., on the following basis:

A moderator crafts a questionnaire and submits it to a group of experts, without each expert that participates in the group knowing the identity of the other experts in the group,

Each expert responds on its own and without the influence of the group or other dominating individuals,

The moderator compiles the results, and formulates a new questionnaire that is submitted to the group again (3 to 4 is the usual case), until satisfactory results are achieved.

Life cycle analysis

Assessment of whether a strategy is likely to be correct given the stage of the product life cycle on criteria, such as: resources, competences, cost reduction, market growth rate, customer loyalty, etc.

Screening strategic options

Evaluating various strategic options by ranking them against the expectations of resources and stakeholders, and/or by decision tree analysis, and/or by scenario planning (i.e. matching options to different future scenarios), etc.

Financial analysis

Assessment of profitability and beneficial impacts likely to accrue from the strategies by the use of various financial measures, and tools, such as: payback period, ROCE, Discounted Cash Flow analysis, Shareholder Value Analysis, funds flow analysis, break-even analysis, sensitivity analysis, cost-benefit analysis, etc. (note)

Scenario planning

A technique that builds various plausible views of possible futures for a business.

Critical success factor analysis

A technique to identify the areas in which a business must succeed in order to achieve its objectives and outperform the competition.

The five forces

The theory that there are five defined factors that influence the development of markets and businesses: Potential entrants, Existing competitors, Existing buyers, Existing suppliers and Alternative products/ services. Using this model you build a strategy to keep ahead of these influences.

Directional Policy Matrix

A technique which summarizes the competitive strength of a business's operations in specific markets.

Competitor Analysis

A wide range of techniques and analysis that seeks to summarize a businesses' overall competitive position.

Appendix 7: Examples Of Strategy, Goals And Objectives

An example of one strategy, general goals, and specific objectives, for a fictitious business entity 'XXX' are described next.

'XXX' Corporation Service Strategy:

The service strategy of 'XXX' Corporation begins by selecting the performance priorities by which the company will provide services to its customers.

These priorities include

a) treat the customer in a friendly, polite and helpful way,
b) deliver our services in a quick and convenient way,
c) price our offered services in a competitive manner, and
d) provide a variety of service-delivery mechanisms to suit customer needs and expectations.

Examples of general goals for 'XXX' are:

Increase customer satisfaction,

improve profitability,

increase sales,

create better products and services, etc.

Examples of specific objectives FOR 'XXX' are: Decrease of production costs by 10% in the next two years, increase revenues by 20% in the next two years, etc.

Appendix 8: Examples Of Vision, Mission And Values

An example of the mission, vision, and values statements of a consumer products company ('XXX' Products, a fictitious entity) are shown next.

'XXX' Company Vision

The vision of 'XXX' is to ensure that we are the customer's first choice in consumer goods around the world.

'XXX' Company Mission

The mission of 'XXX' is to be the best and most successful company in the consumer business. Also to build the world's best global alliance in consumer products, co-operating with similar corporate entities, with a presence in all major world markets.

'XXX' Company Values

'XXX' Corporation will provide services to the public to the highest quality, with honesty, fairness and integrity, and with value for money for all customers.

Appendix 9: EA Checklists

EA Framework Checklist 1: Business Processes

1. How are business processes executed?
2. What data do they use?
3. Where are these business processes executed?
4. Who is responsible for the business processes?
5. When are these business processes used?
6. Why are these business processes needed?
7. Do these business processes support strategic and operational business plans?

EA Framework Checklist 2: Overall Corporate Business Data Management

1. What does the corporate business data represent?
2. How is the corporate business data processed?
3. Where is the corporate business data used?
4. Who is responsible for the corporate business data?
5. When is the corporate business data used?
6. Why is the corporate business data needed?
7. Does this corporate business data support the strategic and operational business plans?

EA Framework Checklist 3: Overall Corporate Business Strategy

1. What data do the business/functional units need?
2. How are key processes executed in each business unit?
3. Where is each business unit/functional located?
4. Who is responsible for the business unit/function?
5. When is the business unit/function involved in key events?
6. Why does each business unit/function exist?
7. Do the business plans for each business unit/function support the corporate strategic and operational business plans?

EA Framework Checklist 4: Business Events/Transactions

1. What data does each business event/transaction need?
2. Which processes are initiated by each business event/transaction?
3. Where do business events/transactions occur?
4. Who is responsible for these business events/transactions?
5. When do they occur?
6. Why do they occur?
7. Do the business events/transactions support the strategic and operational business plans?

EA Framework Checklist 5: Business/Functional Unit Plans and Data

1. What data do the business plans of functional units need?
2. How do business/functional processes support the business functional data and plans?
3. Which locations do the business functional data and plans apply to?
4. Who is responsible for these business functional data and plans?
5. When does each business/functional event and the related data that support the business plans occur?
6. Do operational business/functional plans and their data align with the overall corporate plan and corporate data?

EA Framework Checklist 6: Organizational Issues

1. Does the EA framework support future-state IT requirements and developments?
2. Is the EA framework consistent with the company position on IT technology and IT technology market trends?
3. Does the EA framework align IT and business (corporate and functional units) strategies?
4. Are any IT technology requirements not met by the proposed IT technical infrastructure?
5. Was the gap and other analysis methods and tools used?
6. Were all business requirements of the company documented?
7. Were future-state specifications documented?
8. Were recommendations proposed?
9. Is there an EA team to manage all EA efforts?
10. Is there board and top management support provided for the whole EA effort?

EA Framework Checklist 7: Corporate Strategic Plan Checklist

1. Has the board established an enterprise architecture management program?
2. Does the executive and middle management of the organization have a process, in operating mode, for managing, reviewing and improving strategy?
3. Does the strategic management process include all aspects (Aligning enterprise architecture to business strategy, Monitoring performance against the corporate strategy, Interpreting performance data in a collaborative way, Developing new and innovative strategic ideas and insights, etc.)?
4. Are all the results of the enterprise architecture and strategic management process properly documented?
5. Does the strategic plan of the organization contain all required elements (SWOT, PESTLE, Vision statement, Mission statement, etc.)?
6. Are there corporate plans and specific targets at the specific operational level of: Manufacturing/Production Process, Business unit, Department, Project, and Work team?

7. Are budgets, priorities and other resources assigned to corporate strategic objectives and down to which hierarchy/ management level?
8. Is there a communication system in place, assisting dissemination of strategies, policies and goals to all levels of the organization?
9. Are all the essential strategic components (e.g. corporate objectives to objectives of business units/divisions/departments/functions/projects) aligned?
10. Do all personnel (Board, Executives, Middle management, Employees, and Stakeholders) have a full understanding of the strategy, and its relevant coordination and cooperation activities required at all levels of the organization?

Appendix 10: EA Case Study

In the previous chapters (see Part I of this book) I described an EA implementation management plan, support roles for management, board and support staff to design, implement and monitor your EA implementation, formulating and documenting the enterprise architecture components, EA administration procedures, and EA performance measures and compliance indicators. All of these may tend to be too abstract or theoretical and, in many cases, difficult to fully grasp and utilize successfully, especially for the non-enterprise architecture familiar or sophisticated enough (in IT parlance and issues) board member or manager. In order to mitigate this potential risk I will present an enterprise architecture case study so that I tie all parts, components and elements together and show how you might benefit by the use of the enterprise architecture mechanism for your business.

The purpose of my following case study is to show, in practical terms, how the enterprise architecture approach described in this book (see Part I) can be implemented to solve real-life information-related problems and issues in IT-enabled company operations.

This case study uses mainly the EA controls (such as policies, procedures, practices, methods, checklists, etc.) identified in this book (see Parts I and II) and other standard tools and analysis methods used in the consulting profession and other sources.

Background Information

Company 'XXX' (A fictitious business entity. The real identity and major details of the company are withheld for confidentiality reasons) is a Multinational consumer products company with operations all over the planet (Europe, Asia, Africa, America, Australia), with over 5000 employees. The board of directors of this company, because of various critical problems, decided that they want more effectiveness, structure and discipline applied to their IT management process, practices and operations.

Until now, the various central corporate departments and the regional business units and functions, such as: manufacturing, production services, finance, administration, personnel, payroll administration, sales, consumer products, retail operations, logistics, inventory control, customer services, etc., have been able to approach anyone in the world IT market and purchase and deploy computer and communications hardware as well as custom-made and standardized IT application systems and packages to suit their particular purposes.

These hardware components and application systems were maintained by either the hardware and software suppliers or the central or the regional IT department, or all of them, depending on the priority of the production problem and the timing aspects of the request, the issue at hand or the event that occurred, etc. The only exception had to do with the financial system of the company.

This system was developed and operated in the central corporate data center facility of the company by the central corporate IT department with only limited staff. This system was also running in all regional locations (across the world) of the company and was supported by both the central IT function and the regional IT departments.

All these networks and applications were not connected to each other in any integrated way at all. Many times, critical financial and other corporate reports were produced and detail corporate performance data were provided by these application systems to both the board and senior management for strategic purposes, operational reasons and compliance matters, which did not agree with each other.

These resulted, in many cases, in erroneous and ineffective decisions made by senior management, as well as other embarrassing experiences, compliance problems, and unforeseen events.

A previous project by the corporate executive committee did not rectify the situation as it recommended a complete IT outsourcing services solution. This was found not effective by the board as the various costs, security and privacy issues, benefits and stakeholder demands, regulatory needs and customer expectations were not considered in depth.

This resulted in hiring an external management consultant with the mandate to come up with an efficient approach to provide a framework to resolve this situation caused by the plethora of IT systems, not aligned with business strategy, and also working on their own.

Result of External Management Consulting Assignment

The new external management consultant, using mainly the EA controls (such as policies, procedures, practices, methods, checklists, etc.) identified in this book (see Part I and II) and other standard tools (e.g. audit programs and checklists) and analysis methods used in the consulting profession (e.g. GAP analysis, PEST, Critical Success Factors Analysis, etc.), carried out two major tasks:

Task 1. Audit Review: Audited their IT operations, systems and services according to the rules of the internal audit profession, using a set of specific audit programs and checklists designed for the given assignment and producing a report with findings, test results and conclusions.

Task 2. Interviews: Discussed the issues contained in the following questions, with each board member, senior corporate and business unit manager and each key user of the IT applications deployed in the organization.

Question 1. Overall Business Goals: What were the long-term business goals and the short-term business objectives of the company, from the board perspective?

Question 2. Business Function Goals: What were the long-term business goals and the short-term business objectives of the company, from the business unit and function perspective?

Question 3. Business Model: Are there any efforts, projects or future plans to change the current business operating model of the company?

Question 4. IT Goals: How did the board perceive and expect the role, contribution and support by IT systems and services of both the long-term business goals and short-term objectives of the company?

Question 5. Link IT to Customers: How did the present company IT systems and services support and enable the organization to provide products and services to customers on the basis of the existing operating model of the company?

Question 6. Link IT to Business Unit/Function: How did the specific business unit/function perceive and expect the role, contribution and support by IT systems and services of both the short-term as well as the long-term business goals of the unit/function?

Question 7. Link IT to Products and Business Model: How did the present IT systems and services support and enable the business unit/function to provide products and services on the basis of the existing business operating model of the company?

Question 8. IT Governance Framework: Are there any efforts, projects or future plans to change the current IT Governance operating model of the company, or business unit/function?

Question 9. Non- IT Systems and Decision-Making: How did the present non-IT systems and services contribute to corporate and business unit/function decision-making?

Question 10. IT and Decision-Making: How did the present company IT systems and services contribute to corporate and business unit/function decision-making?

Question 11. IT Costs: How much, did the present IT systems and services cost, both to each business unit, business function and to the overall company?

Question 12. Critical Success Factors: What were the critical success factors, constraints and enabling key measures driving the strategy and operations of the company, from the perspectives of finance, production, external regulatory authorities, market sector, customers, community and industry?

I should note that the above questions were used in a style of a Socratic dialogue way (formal inquiry and debate between individuals with potential opposing viewpoints based on asking and answering questions to stimulate critical thinking and shed light to ideas and responses), thereby soliciting the genuine responses of the respondents and not presuming what they might communicate or driving them to a wrong conclusion, or noting what reply they should provide.

Therefore the new external management consultant, on the basis of the data collected during the above two tasks (Task 1. Audit Review, Task 2. Interviews) and processed accordingly, issued his first preliminary report with a basic set of recommendations.

He also solicited the comments and feedback responses from all participants during this consulting process and carried out task 3 to verify and complete his recommendation.

Task 3 (controls review) entailed his reviewing and evaluating the current corporate and business unit/function controls of the company in all business departments and locations, and their future demands and expectations from IT.

On the basis of all above activities (Task 1. Audit Review, Task 2. Interviews, Task 3. Controls review, management responses to the preliminary report) he issued his final report which contained recommendations to the company with ways to resolve the IT practices issue.

This plan is designed to improve IT services for the future, by implementing specific actions and relating them to 5 themes (Theme 1: Establish enterprise architecture, Theme 2: Improve IT operations, Theme 3: Link IT to enterprise architecture, Theme 4: Manage partners and Theme 5: Build resilience) in order to focus on what is crucial to improve things in a concrete manner.

These are detailed next:

Theme 1: Establish enterprise architecture

Action 1. Establish an EA Implementation Process: An Enterprise Architecture (EA) implementation process is required for the effective management of all the recommended actions of this consulting assignment (actions 2 to 10).

This will be achieved by establishing an EA implementation project team with adequately skilled resources (manager, staff, users, etc.), funds, methods, tools and practices. The board of directors and the central corporate IT committee will need to guide, support, sponsor, supervise, ratify, review, monitor and improve all of their related activities, and EA implementation efforts.

Action 2. Design and Implement an Effective Enterprise Architecture: An enterprise architecture (EA) is a conceptual approach that assists your company with the understanding of your own structure and the way your functions work. It provides a map of your company and is a route planner for business and technology change.

Formulate your own EA by following the 'Management Plan for Designing and Implementing an EA Framework', described in this book (Part I), and by obtaining and deploying all the required components (management roles, files, software, etc.) customized to your company's purposes.

Theme 2: Improve IT operations

Action 3a. Craft a Results-Oriented IT Strategy: Formulate an effective IT strategy for hardware, system software, applications, technological platforms, etc., to provide short-term flexibility and suit the long term strategic and operating needs of the company at all levels (corporate, business unit, business function).

Action 3b. Link to EA. Link and align this IT strategy with the new EA of the company.

Action 4a. Improve the Management of IT Operations: Improve the present organization of the IT departments (corporate, business unit) by staffing them with adequate resources which possess modern skills, technical capabilities and business knowledge of the functions and business transactions of the company.

IT management will need to fully support the new EA process and enterprise architecture by developing and using the required IT Governance framework, policies, standards, and procedures and obtain senior management for their effective implementation.

Action 4b. Link to EA. Link and align IT operations with the new EA of the company.

Action 5a. Build and Operate a Corporate and Regional Data Centers: Design and build a new corporate data center and other required regional data centers with adequate capacity to house and operate from a central or regional location both the present and the future IT applications and services of the company.

This includes obtaining and installing to full production status all the required new hardware, systems software, and technological platforms, networks, and other components of the EA identified in this process, to operate all IT applications and services.

The data centers will be managed by IT (central or regional), will be connected to each other, and end users will have access to their applications on the basis of approved security procedures and an authority scheme.

Action 5b. Link to EA. Link and align these data centers with the new EA of the company.

Theme 3: Link IT to enterprise architecture

Action 6a. Improve IT Applications: This will be accomplished by

a) the design of a new, integrated with full business functionality, information architecture plan on the basis of the new EA,

b) the transfer of all applications running in the business functions of the organization to run in full productive mode in the central data center facility, or the modification or even the scrapping of some of these, depending on various problems technical and operational considerations and
c) the development or purchasing or leasing of new applications to support existing or new needs, and the linking all these applications on the basis of a new information architecture plan. A separate action plan must be created and executed depending on the problems of transferring the applications to the new data center, the issue of obtaining or developing the new applications, etc.

Action 6b. Link to EA. Link and align these improved IT applications with the new EA of the company.

Theme 4: Manage partners

Action 7a. Manage Partners and Vendors: Create and implement corporate policies and procedures to manage centrally external partners and software vendors who do any IT work (consulting, maintenance, IT training, etc.) for the company, regardless of the location of the company where the work is carried out.

Action 7b. Link to EA. Link and align these policies and procedures with the new EA of the company.

Action 8a. Centralize IT Procurement: Create and implement corporate policies and procedures to manage centrally all IT procurement issues of the company, regardless of the location of the company where IT purchases are needed.

Action 8b. Link to EA. Link and align these policies and procedures with the new EA of the company.

Theme 5: Build resilience

Action 9a. Prepare for Business and IT Disaster: This will be achieved by the design and implementation of a Business Continuity and an IT contingency strategy, plan, resources, procedures, and a disaster team. This planning effort should be based on the corresponding analysis of risks related to business impacting the company, as a whole. For more details, see my book 'Business Management Controls: A Guide', published by IT Governance Publishing, United Kingdom (www.itgovernance.co.uk).

Action 9b. Link to EA. Link and align these plans with the new EA of the company.

Action 10a. Manage Changes: This will be achieved by designing and executing an effective and dynamic change management program and process to enable and facilitate board members, senior management, business unit and function managers, critical end users, IT staff and external providers, etc., to communicate, interact and operate efficiently and effectively in the new results-oriented IT-enabled environment.

Action 10b. Link to EA. Link and align these change management policies and procedures with the new EA of the company.

Conclusion

This plan was implemented, with some small variations, effectively. The results of this process were reviewed and evaluated by all parties concerned (board, senior management, business unity managers, business functional managers, IT) and the external management consultant on a monthly basis, with the needed adjustments made as the project was being fully implemented.

This case study, showed hopefully, how important enterprise architecture can be for your company, and the benefits that can come by its proper use.

About The Author

John Kyriazoglou obtained a B.A. (Honours) from the University of Toronto, Canada, also earning a Scholastic award for Academic Excellence in Computer Science. John has worked in Canada, England, Greece and other countries for over 35 years, as a Senior IT manager, Managing Director, IT auditor and consultant, in a variety of clients and projects, in both the private and the public sectors. He has published several books and articles in professional publications, has served in numerous scientific committees and is a member of several professional and cultural associations.

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