



Business Process Architecture: From Value Chain to Business Process

Introduction



Business process architecture not only describes the functional decompositions of an enterprise value chain but also enables an understanding of value streams showing chains of cross functional end-to-end business processes and their value proposition to the enterprise's strategies. The business process architecture is critical in all business process modeling works whether the work is for process documentation or process automation. This paper describes the variety of business process frameworks available for adoption as an organization's business process architecture and using it as an instrument to provide an over-arching control on the process modeling works and more importantly linking the loose processes to the organizational strategies.

One of the key success factors for adopting a process centric management is the understanding of the overall operation of an organization as a systemic process delivering values to its stakeholders. A good starting point is the Porter's Value Chain (Figure 1).

The Value Chain shows the categorization of business activities that create values within an organization and delivery of those values to the customer (see Figure 1). It forms the foundation of having a systemic view of an organization. It consists of a group of primary activities that delivers the value to the customers while having another group of supporting activities providing various enabling supports to the primary activities. The following

sections introduce the various business process frameworks that can be adopted/adapted to building the bridge between a business value chain and its collection of business processes.

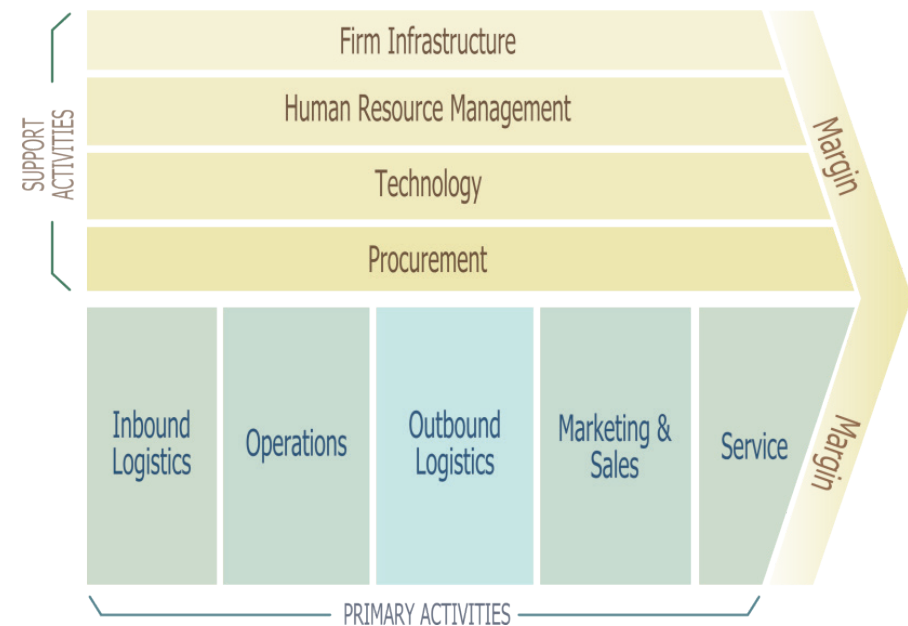


Figure 1: Porter's Value Chain

Business Process Architecture?

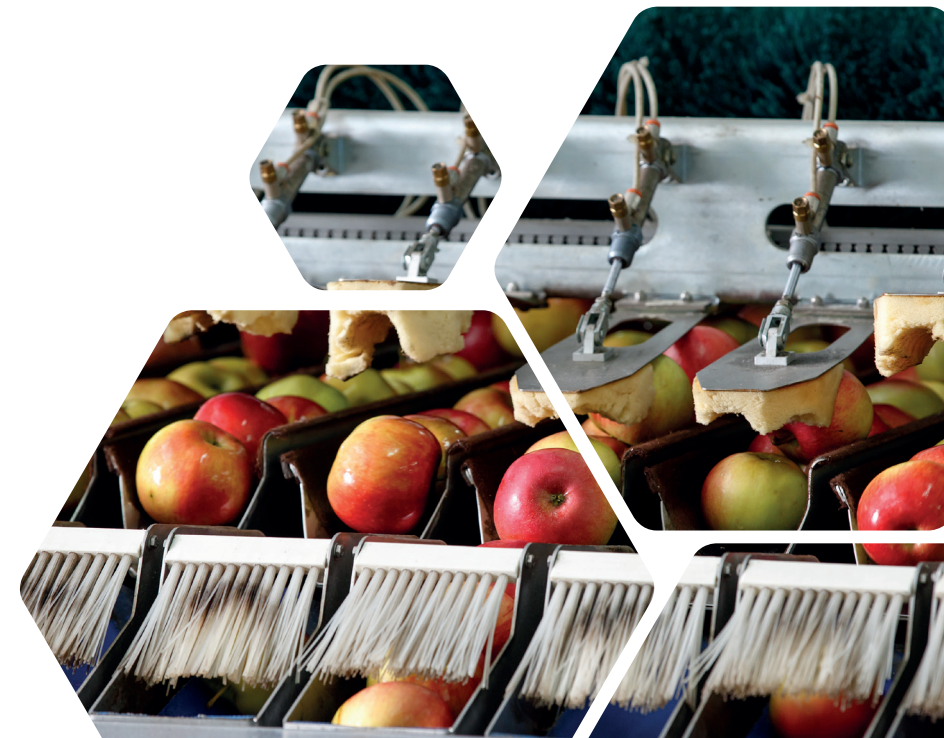
Business process architecture imposes a top-down bird-eye view of an organization. It renders the landscape view of business processes. Depending on the method adapted, it is sometimes known as the process landscape or a high level process map providing an overall landscape view or map view of the business processes of business operation.

***Note:** Without a business process architecture in place, the business sees only the trees and not the forest; potentially clearing the wrong spot in the forest.*

A business process architecture shows the collections of related business activities within specific business functions. The categorizations and groupings depend on the business process framework adopted for creating the business process architecture.

You can develop business process architecture from scratch through trial-and-error and drain enormous amount of resource. On the other hand adapting an existing business process framework to build up an organization's business process architecture not only saves time but present the potential of adopting better practices and faster identification for areas of attention. The following sections provide an overview of some common business process frameworks.

***Note:** The frameworks are introduced in alphabetical order and not preference.*



Industrial Business Process Frameworks

APQC PROCESS CLASSIFICATION FRAMEWORK (PCF)

APQC PCF is the foundation used by APQC originally for benchmarking of process performance across organizations. It is also now commonly used as a framework to facilitate process management. The framework organizes business processes into two areas – operating processes; and management and support services.

The Operating Processes include five Level 1 Categories that form the core business activities:

- 1.0 Develop Vision and Strategy;
- 2.0 Develop and Management Products and Services;
- 3.0 Market and Sell Products and Services;
- 4.0 Deliver Products and Services; and
- 5.0 Manage Customer Service.

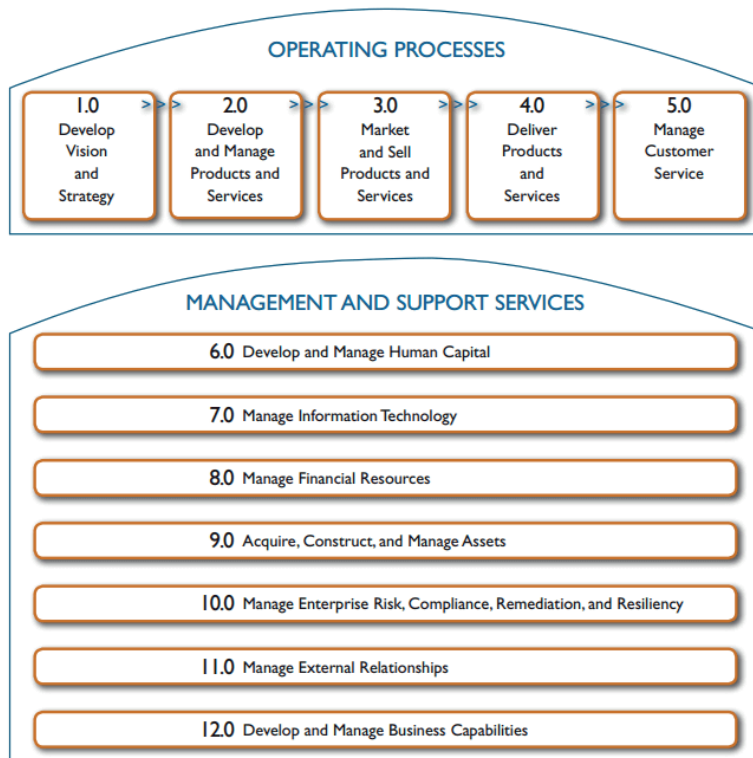
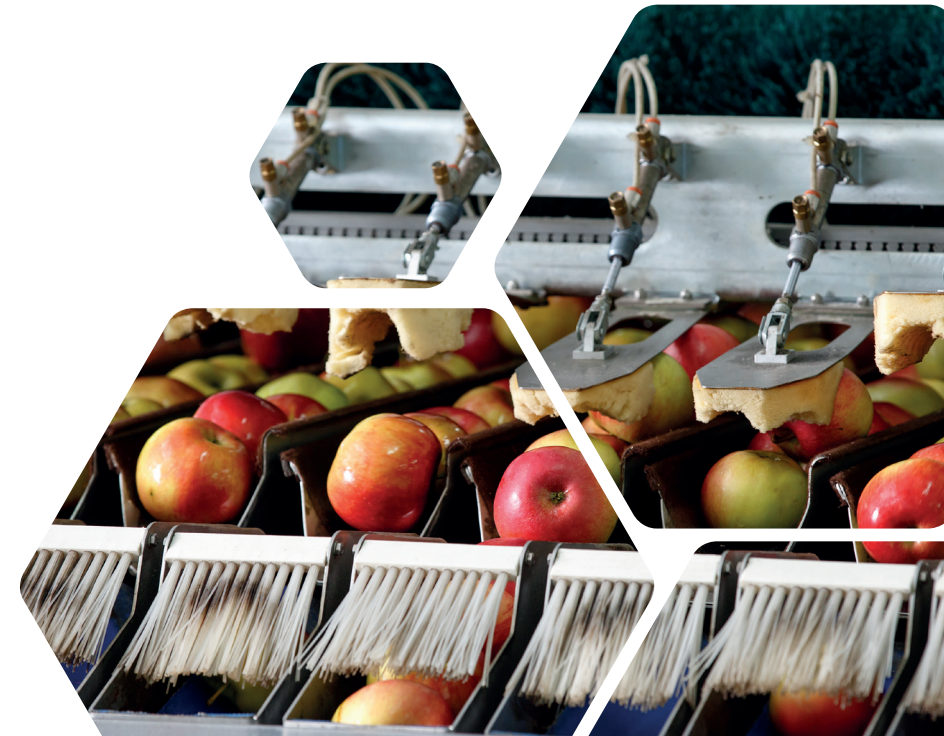


Figure 2: APQC Process Classification Framework ©APQC



Industrial Business Process Frameworks (cont...)

The Management and Supporting Services are the supporting activities (as seen in a Value Chain) including:

- 6.0 Manage Human Capital;
- 7.0 Manage Information Technology;
- 8.0 Manage Financial Resources;
- 9.0 Acquire, Construct, and Manage Assets;
- 10.0 Manage Enterprise Risk, Compliance, and Resiliency;
- 11.0 Manage External Relationships; and
- 12.0 Develop and Manage Business Capabilities.

Note: There are five PCF levels with formal terms, namely – Level 1 Category, Level 2 Process Group, Level 3 Process, Level 4 Activity and Level 5 Task.

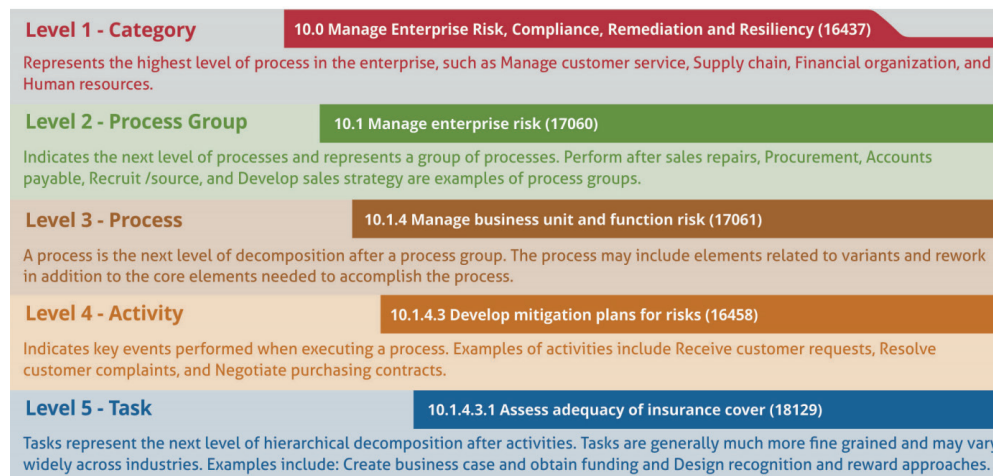
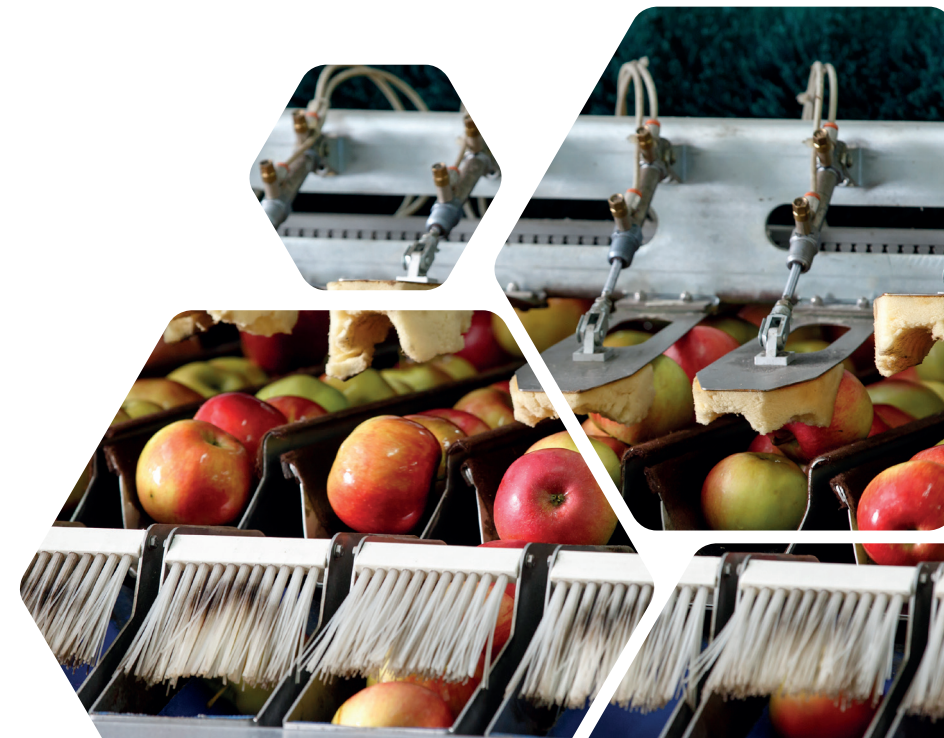


Figure 3: PCF Levels

Each “category” is made up of several level 2 “process groups” – representing collections of level 3 processes. It is at the process level where standard inputs, outputs and performance metrics are identified.

The PCF Categories and Process Groups align very closely to business functions of traditional organizational structure and therefore its adoption can be either enterprise wide or focused at a divisional or business function level. At department level, the framework is adopted for instance by an insurance firm to redefine the business processes within functions. A different example is where a mailing service provider adopted the process framework initially only for its cross-functional billing process at divisional level.



Enhanced Telecom Operations Map (eTOM)

The eTOM is published by the TM Forum which is a specifically designed and widely accepted business process framework for the telecommunications industry. Unlike the other business process frameworks, eTOM is only one of the components of the TM Forum Frameworkx – an integrated business architecture. The other three components are Information Framework, Application Framework and Integration Framework.

There are three high level (Level 0) groupings: 1.1 Operations; 1.2 Strategy, Infrastructure and Product (SIP); and 1.3 Enterprise Management. The Operations process covers the core of day-to-day operational management; the SIP processes cover planning and lifecycle management; and the Enterprise Management process covers corporate or business support management.

The Enterprise Management area is made up of seven groups. Both SIP and Operations areas include four groups of processes respectively.

Note: *There are 6 levels used in eTOM beginning with Level 0. Further breakdowns are Level 1 process groupings (business function) Level 2 processes (end-to-end processes) , Level 3 and 4 both represent tasks process flows, and Level 5 tasks.*

The model also provides an end-to-end business process view (value streams) that flow across the various business functions in the SIP and the Operations. There are three value streams within the SIP areas – Strategy and Commit; Infrastructure Life Cycle Management; and Product Lifecycle Management. In the Operations area there are four value streams – Operations Support and Readiness; Fulfillment; Assurance; and Billing and Revenue Management.



Enhanced Telecom Operations Map (eTOM) (cont...)

In BPM, the eTOM framework is commonly adapted as a reference model for discovering and identifying gaps, removing duplication and optimizing processes within the telecommunication service providers.

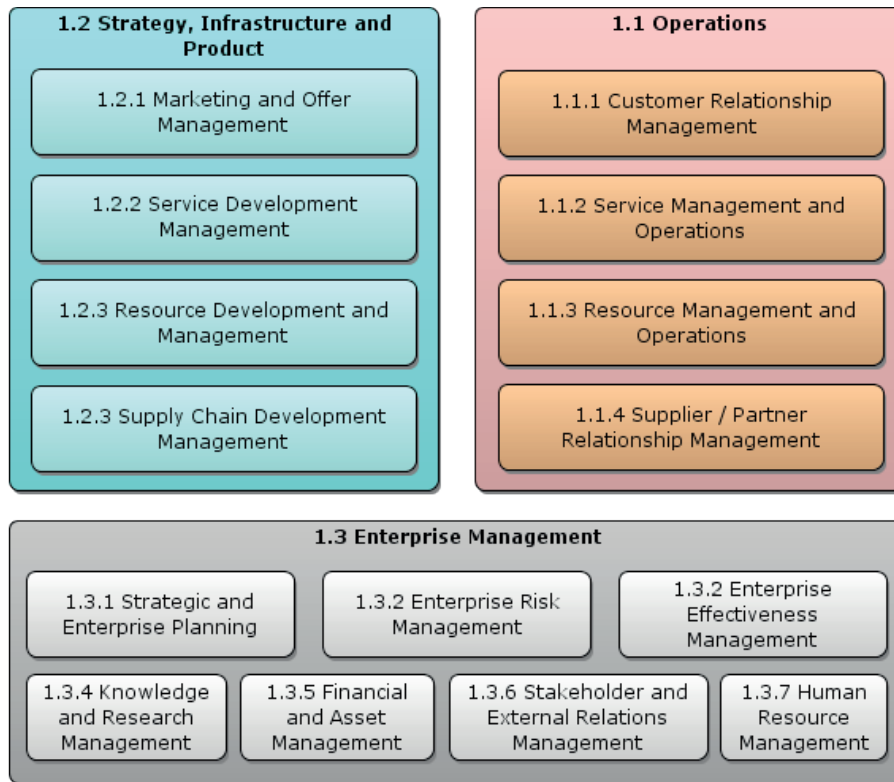
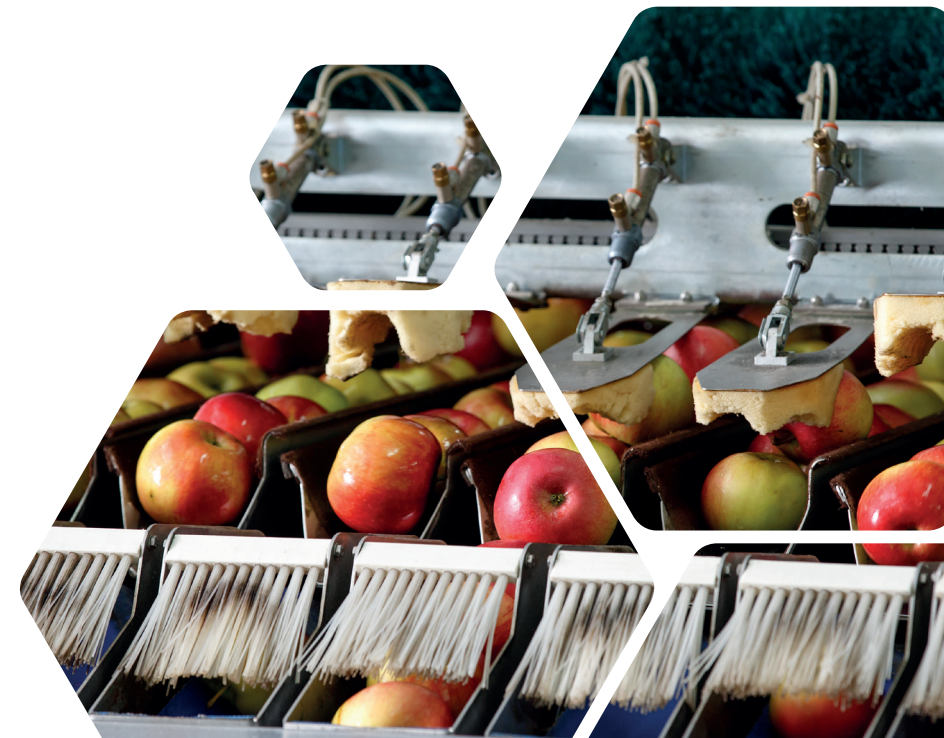


Figure 4: Enhanced Telecom operations Map (eTOM) ©TM Forum



Supply Chain Operations Reference (SCOR) Model

The SCOR model is developed by the Supply Chain Council. The model is organized around the six primary process types on integrated processes:

- **PLAN** – includes processes that assess supply resources; aggregate and prioritize demand requirements; plan inventory for distribution, production, and material requirements; and plan rough-cut capacity for all products and all channels;
- **SOURCE** – includes processes that obtain, receive, inspect, hold, issue, and authorize payment for raw materials and purchased finished goods;
- **MAKE** – includes process that request and receive material; manufacture and test product; package, hold, and/or release product;
- **DELIVER** – includes processes that execute the end-to-end order management; accounts receivable management; warehouse activities; and shipping of products.
- **RETURN** – includes processes for defective, warranty, and excess return processing.
- **ENABLE** – includes processes that focuses on process performance, information, policy, inventory strategy, capital assets, transportation, physical logistic network, regulatory, and other management processes to enable the planning and execution of supply chain activities.

It spans from suppliers to customers interactions aligning operational strategy, physical material, work and information flows. The diagram in Figure 5 shows Level 1 process types and Level 2 process categories of SCOR model.

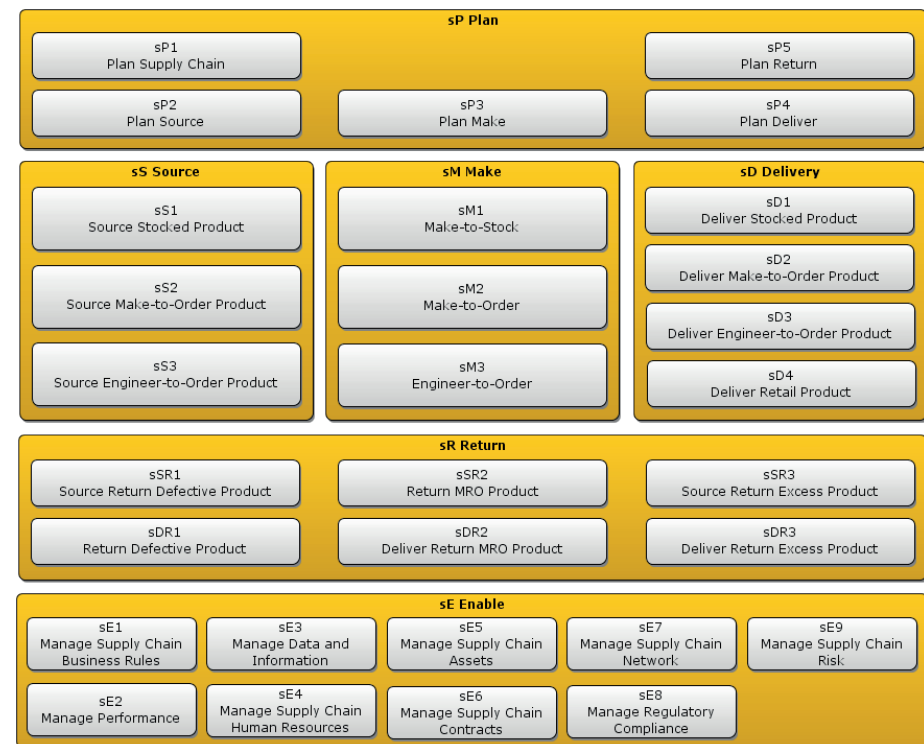


Figure 5: SCOR Model

Level 1 is the high level end-to-end definition of the scope and content of the supply chain. Level 2 is the configuration level where an organization selects the appropriate configuration (process categories) for its supply

Supply Chain Operations Reference (SCOR) Model (cont...)

chain aligning with its operations strategy. For example, a value chain focusing on cost reduction through standardization and minimal variation such as a supermarket will select sS1 Source Stocked Product under SOURCE, sM1 make-to-Stock under MAKE and sD1 Deliver Stocked Product and sD4 Deliver Retail Product under DELIVERY. On the other hand, a value chain for a custom software development business will choose sS3 Source Engineer-to-Order Product under SOURCE, sM3 Engineer-to-Order under MAKE and sD3 Deliver Engineer-to-Order Product.

Note: SCOR includes 4 levels of process details – Level 1 Process Types; Level 2 Process Categories, Level 3 Process Elements (decompose processes) and Level 4 Implementation level (decompose process elements).

In addition the Supply Chain Council has also published Design Chain Operations Reference (DCOR) model and Customer Chain Operations Reference (CCOR) model extending into other areas of business operations not in the scope of the SCOR model.

The CCOR model defines the customer part of the Value Chain as the integration of PLAN, RELATE, SELL, CONTRACT, SERVICE, and ENABLE processes. The DCOR model defines the design part of the Value Chain as the integration of PLAN, RESEARCH, DESIGN, INTEGRATE, AMEND, and ENABLE processes. It is the combination of these three frameworks and the market chain (supply and demand of products/services) that forms the high level view that align to a Value Chain (see Figure 6).

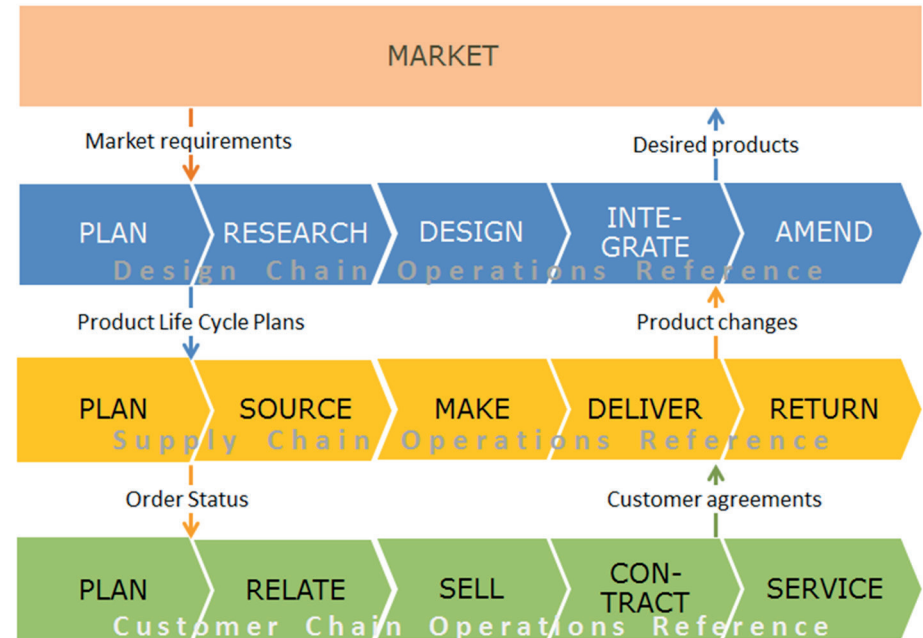


Figure 6: Combined View of DCOR, SCOR and CCOR

Value Reference Model (VRM)

The Value Reference Model is a business process classification scheme developed by Value Chain Group. Under VRM, business processes are grouped into three Level 1 (Strategic Level) process categories:

- PLAN – an overarching process aligning strategic objectives with tactical and execution abilities in the value chain;
- GOVERN – an overarching process supporting strategic objectives and enabling the value chain to operate through rules, policies and procedure;
- EXECUTE – overarch all the execution processes in the model, operates within the limits of the management criteria from GOVERN process and to the parameters defined by the PLAN process.

The diagram in Figure 7 shows an integrated systems view of the three strategic process categories.

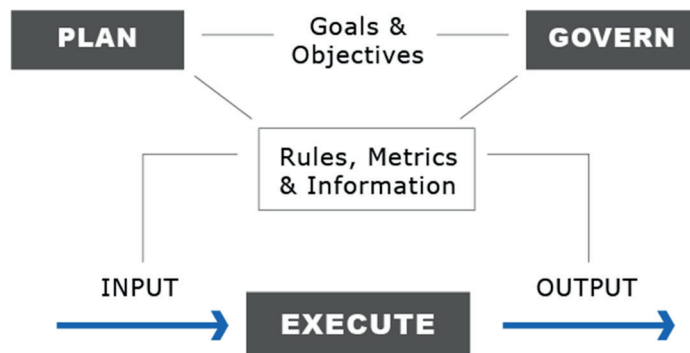


Figure 7: Integrated View of the three VRM Strategic Process Categories

The PLAN process consists of four tactical level process groups – Plan Value Chain acting on the overall value chain requirements, resources and communication; with Plan Product Development, Plan Supply Chain, and Plan Customer Relations managing requirements and resources in each respective domain (see Figure 8).

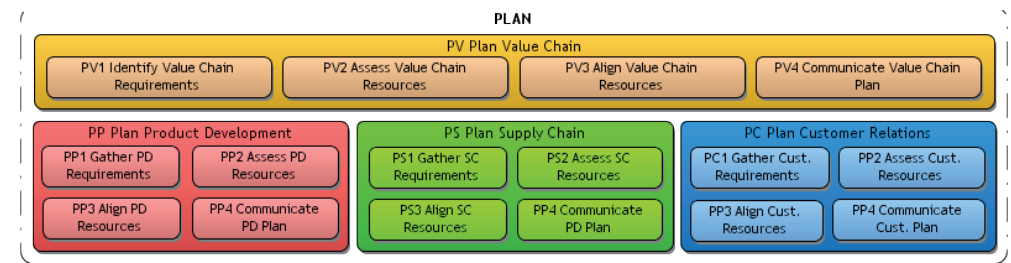
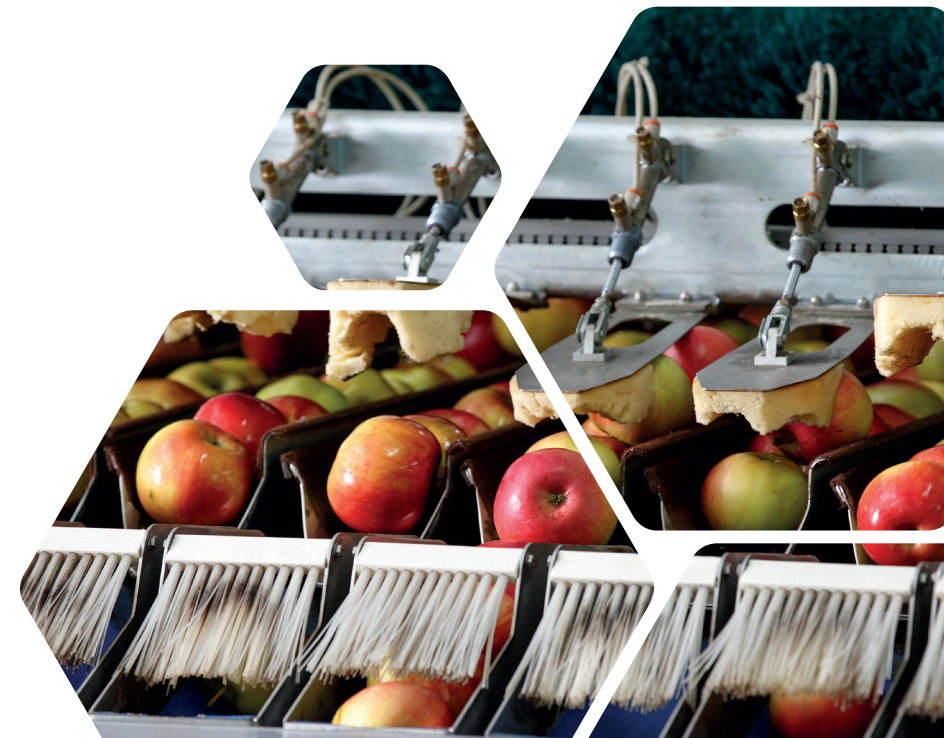


Figure 8: VRM PLAN Processes



Value Reference Model (VRM) (cont...)

Note: There are 3 levels in VRM – Level 1 Strategic; Level 2 Tactical; and Level 3 Operational.

The GOVERN process also consists of four tactical level process groups – Govern Value Chain; Govern Product Development; Govern Supply Chain; and Govern Customer Relations – aligning to the four groups under PLAN (see Figure 9).

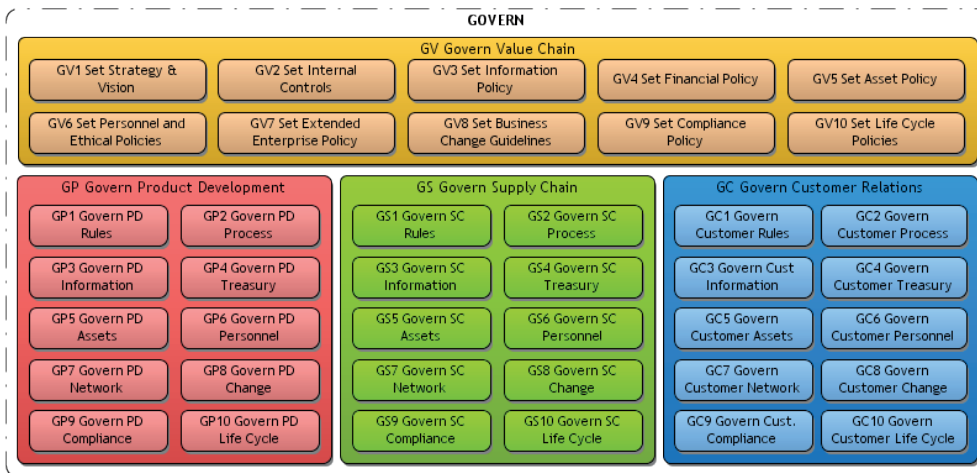


Figure 9: VRM GOVERN Processes

The EXECUTE process is made up of nine tactical level process groups under three domains –Market, Research and Develop under Product Development domain; Acquire, Build and Fulfill under Supply Network domain; Brand, Sell and Support under Customer Relations domain (see Figure 10).

Similar to SCOR, VRM also provides process configurations the tactical level to meet the different scenarios in the operational strategies. Each of the

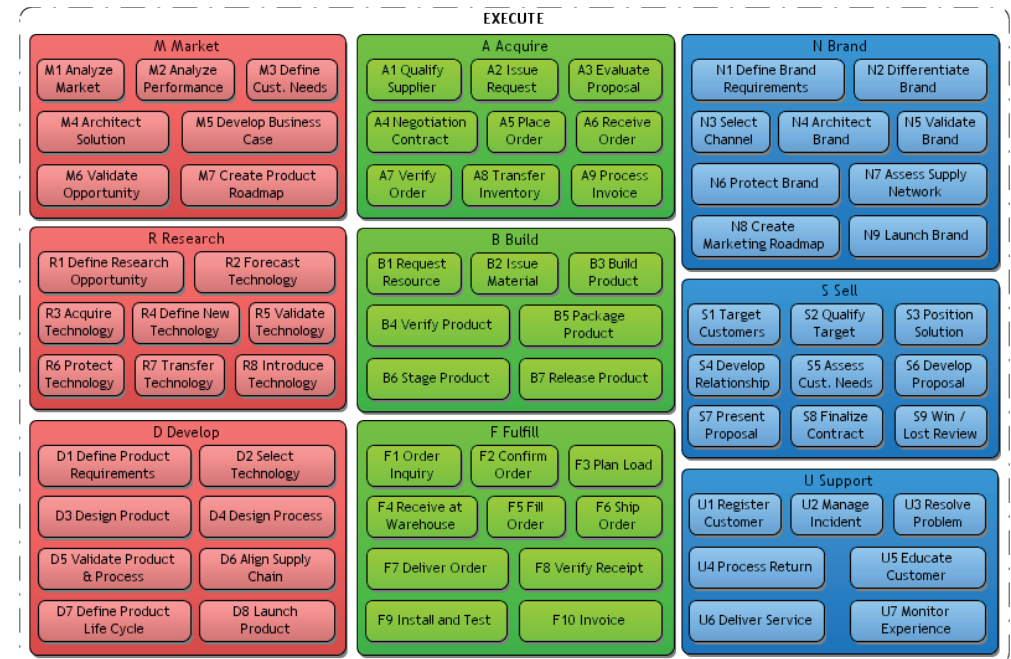


Figure 10: VRM EXECUTE Processes

tactical process is further decomposed into specific operational processes. In order to facilitate adaption instead of adoption of the framework, VRM provides extensibility at organizational or industry level delivering specific proprietary eXtensible Reference Model (XRM). VRM Levels 1, 2, 3 are extended to XRM Levels 3, 4, 5.

In conjunction with the VRM, the VCG also developed other supporting frameworks including Value Lifecycle Model (VLM), Integrated Continuous Improvement Methodology (ICIM); Business Process Transformation Framework (BPTF); and its SOA Information Model.

Other Reference Models

Apart from the industry reference frameworks described in previous sections, there are several business process frameworks and/or reference models developed by the various vendors. Examples include: Accenture Service Line Business Process Reference models and IBM Component Business Models (CBM) and Information Frameworks (IFW).

There are also specialized frameworks that are specific to a business function such as ITIL and CoBIT for IT processes and PMBOK and PRINCE2 for project management.

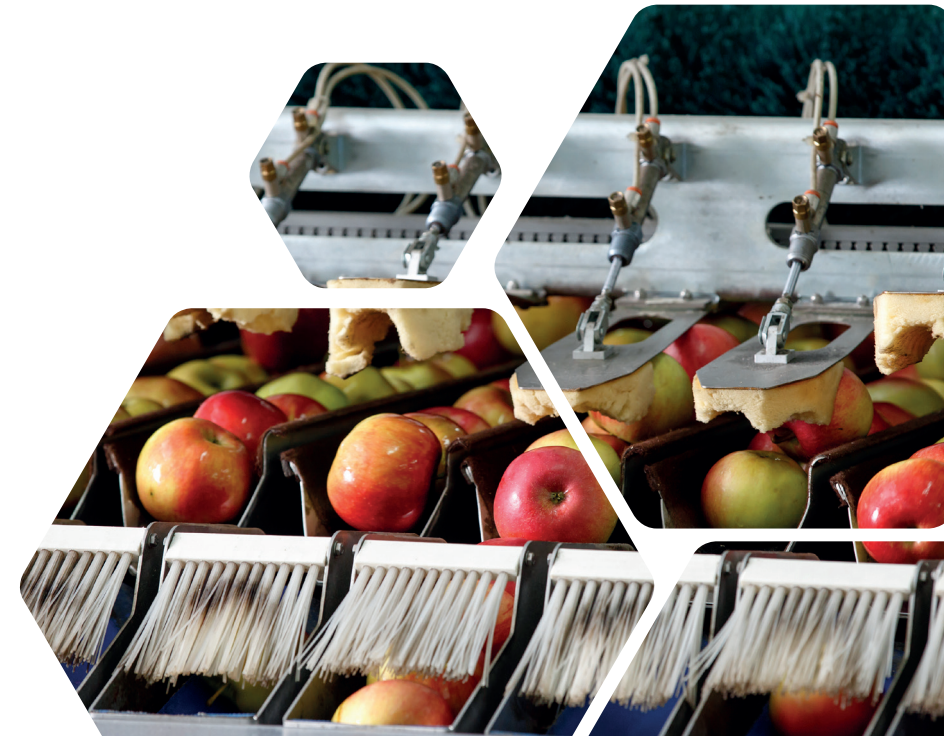


Conclusion

Adapting a suitable business process framework or a suite of frameworks to build the business process architecture ensures a top-down intelligence of the business processes across the organization and not just a siloed view of the trees in the forest. An established business process architecture based on a good framework is also the ideal structure for managing business process within an enterprise process repository used by business process modelers.

In addition, these frameworks offer standard metrics that can be adapted for measuring of the business process performance. With the given inputs and outputs of each of the standard processes, it is possible to fast track the understanding of end-to-end business processes (value streams) of the business. This is key to identify and determine the core and differentiating activities from the supporting services and allowing businesses to focus their efforts at the right place. At the same time, the adaption of such frameworks opens up opportunity for introduction of standard practices for the supporting activities.

Last but not least, adopting or adapting a business process framework as a baseline to build your business process architecture is only one of the many pieces of puzzles for your business process management. Although the frameworks are powerful and flexible, they can only act as a repository and a dictionary at most. Greater value of the process architecture can only be achieved through its usage with effective change management, process optimization techniques, and enabling agile technologies.





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