A Comparison of Common Business Modeling Approaches to GODS Generic Business Architecture

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Abstract

This Article attempts a lean comparison between some of the most employed business modeling approaches and the proposed GODS single page generic Business Architecture (gBA), summarized in the first section. This work assists not only a positioning of the current enterprise modeling approaches versus the generic business architecture but also a comparison between the approaches themselves. For the purpose of this Article, the common denominator of the comparison is the process. Mappings are limited to the top level of the process taxonomies.

GODS Single Page Generic Business Architecture (gBA), in brief

The single page GODS generic Business Architecture consists of key Enterprise business functions interconnected by flows that implement the Enterprise structure and its operation.
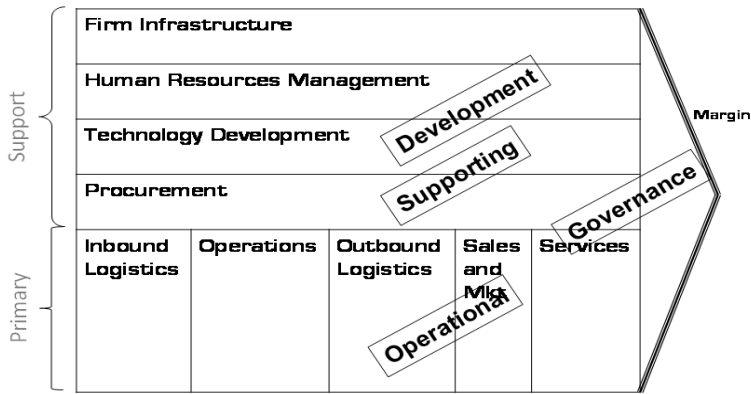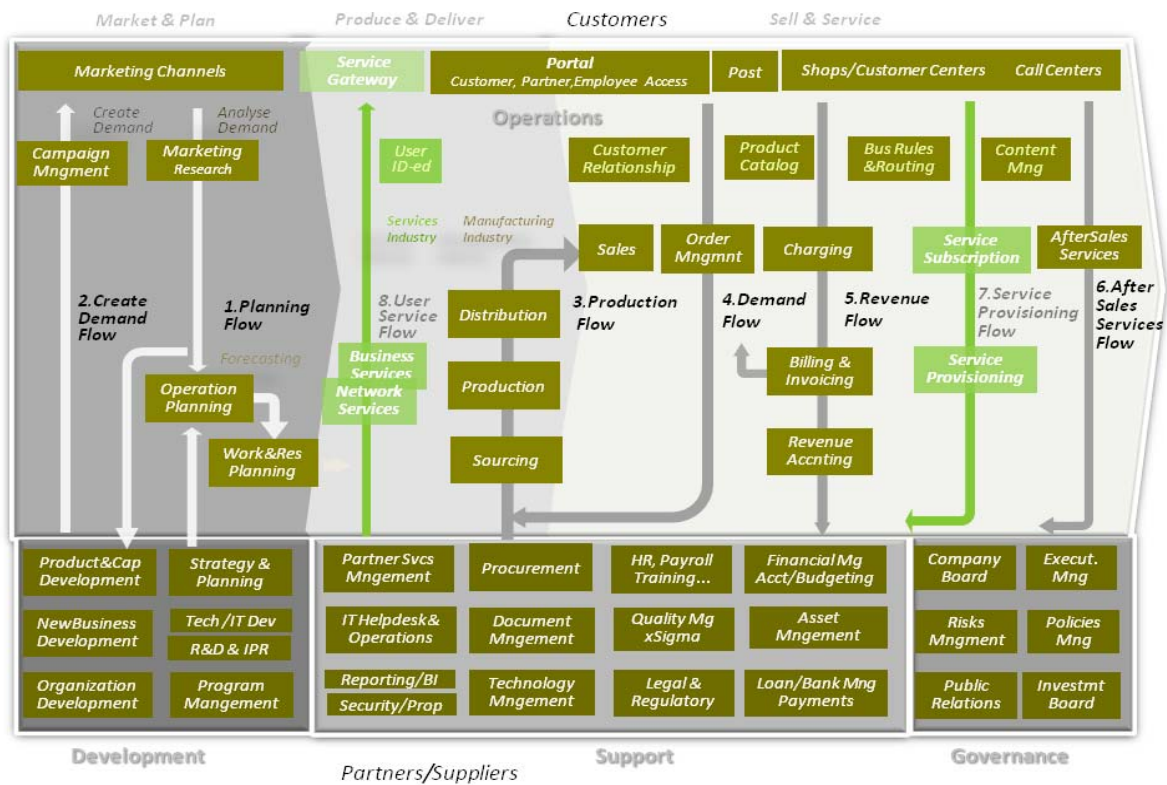
Michael's Porter Value Chain

Figure 1. Mapping GODS generic architecture to Porter's Value Chain

Figure 2. The GODS single page generic business architecture

GODS stands for Governance, Operations Delivery and Support a basic taxonomy of the enterprise.

The proposed generic business architecture is rooted in Michael Porter's Value Chain (Primary and Support activities) from which Support part, it splits and expands the Enterprise Governance and Development functions. It then overlays a proposed business function map and critical operational flows that characterise the business cycle: Plan, Create Demand, Produce, Sale/Fulfil Order (Satisfy Demand), Charge, Bill & Accrue Revenue and the After-Sales Service (and reverse supply chain).

The Development, Support and Governance business flows are not illustrated (the Operations/Primary are) since, while interacting with most other functions, they are typically contained within the corresponding business functions. Still, other typical business flows are depicted in the book (see References section).

Enterprise stakeholders, beside customers, partners and suppliers, are not represented since accent is set on the model rather than its context. Also this reduces the clutter. The enterprise interacts though with many stakeholders in such fields as technology, labour and capital markets. It is also affected by such external factors as regulatory, competitors and new entrants.

Mapping scope and approaches

To prove the utility of the single page generic business architecture and ease a potential transition to its employ, this paper is investigating the mapping of most known business modeling approaches to this generic model.   Compliance to the ISO42010 architecture standard is considered beforehand.

Mapping scope

The enterprise modeling approaches considered for comparison are:

- Enterprise Architecture frameworks such as Zachman, TOGAF and FEAF

- Porter's Value Chain

- Business Process frameworks such as APQC, Value Chain Group's Value Reference Model

- Frameworx (eTOM…) of TM Forum

- Microsoft's Motion and IBM's Component Business Model (CBM) frameworks

- Business Model representations such as Osterwalder et al.

Mapping approaches

The mappings are often self describing showing the alignment between taxonomies and Porter's Value Chain.

1. To ease alignment, a GODS process taxonomy is first created taking into account the fact that business architecture functions and flows essentially consist of processes which are is also the basic entity of most business modeling approaches (such as process frameworks, capabilities and component models). Business Functions are similar, if not same, to capabilities in Enterprise Architecture terminology. Business Flows are comparable to Value Streams in xSigma methods.

   The mapping of a process is done to a GODS business function unless the process has an end to end flavour, in which case it will be done to a business flow. The mapping, rather than going into exhaustive detail, aims to show compatibility with other approaches but solely at the top level of the hierarchical process decomposition of a framework. When the framework consists of a matrix only one dimension is considered. Not all activities were illustrated in pictures because of lack of space in the diagram.

2. Porter's Value Chain also eases mapping because it is a pattern found in both GODS and other modeling methods. It is also the most intuitive business modeling approach and oldest in use.

3. The GODS taxonomy level used in comparison is two.

GODS Compliance to ANSI/IEEE 1471 - ISO/IEC 42010 Architecture Standard

According to the standard, "architecture is the fundamental organization of a system embodied in its components, their relationships to each other and to the environment and the principles guiding its design and evolution". And architecture can be described in Viewpoints/Views, essentially.

The generic model proposed is an architecture in the sense of this standard in that it consists of components (functions) in relationships (flows). By comparison, other methods typically consist of either business functions (or capability maps) or business flows (value streams).

The model itself does not exhibit views since represents a business architecture in a picture. Still, views describing stakeholders' viewpoints, in the sense of the 1471 standard, could and should be added to create the fully fledged business architecture.

Mapping to EA frameworks

The model is compared to Zachman and mapped to EA frameworks like TOGAF and FEAF.

Alignment to Zachman's

The generic Business Architecture fits in the first two cells of the second row the What and How.

Figure 3. GODS generic business architecture scope through a Zachman perspective

Mapping to TOGAF's

The generic model maps on the business architecture phase of the ADM development process.
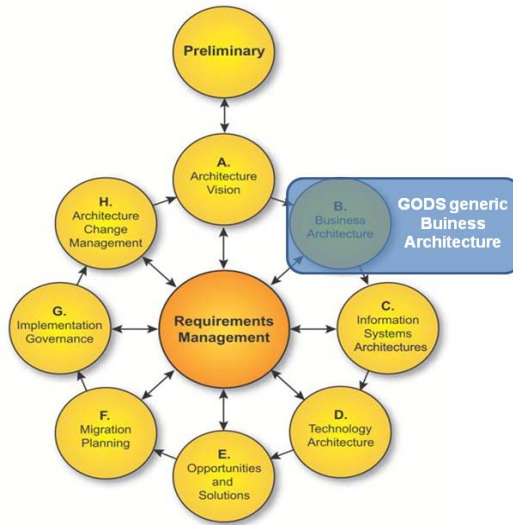
TOGAF 9

Figure 4. Mapping to TOGAF

Mapping to FEAF

The generic model maps on FEAF Business Architecture at the top of the pyramid.
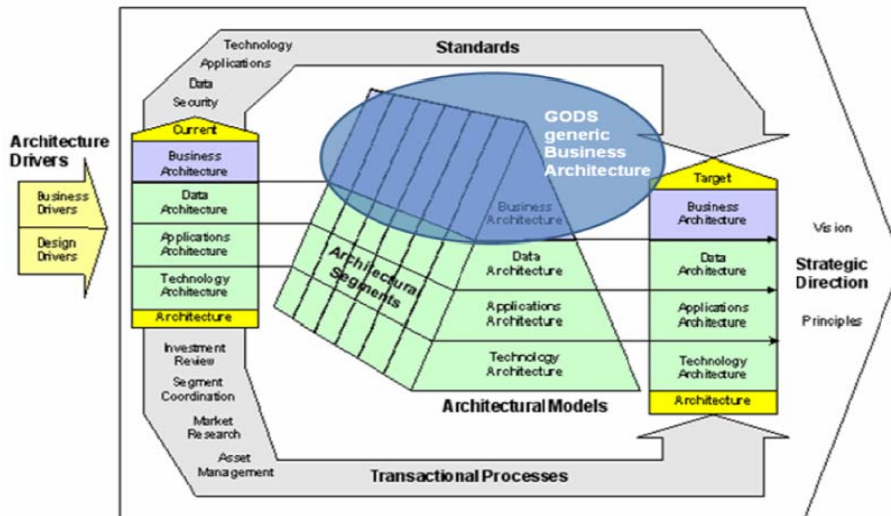
Figure 5. GODS generic business architecture mapping on FEAF

Mapping to Porter's Value Chain

To ease mapping to other frameworks, the generic architecture was converted to a simple process taxonomy. Primary activities were mapped to GODS Operations. Enterprise development ones are extracted in a separate GODS Development function. Governance activities, not mentioned in Porter's, stand as a separate function in GODS.
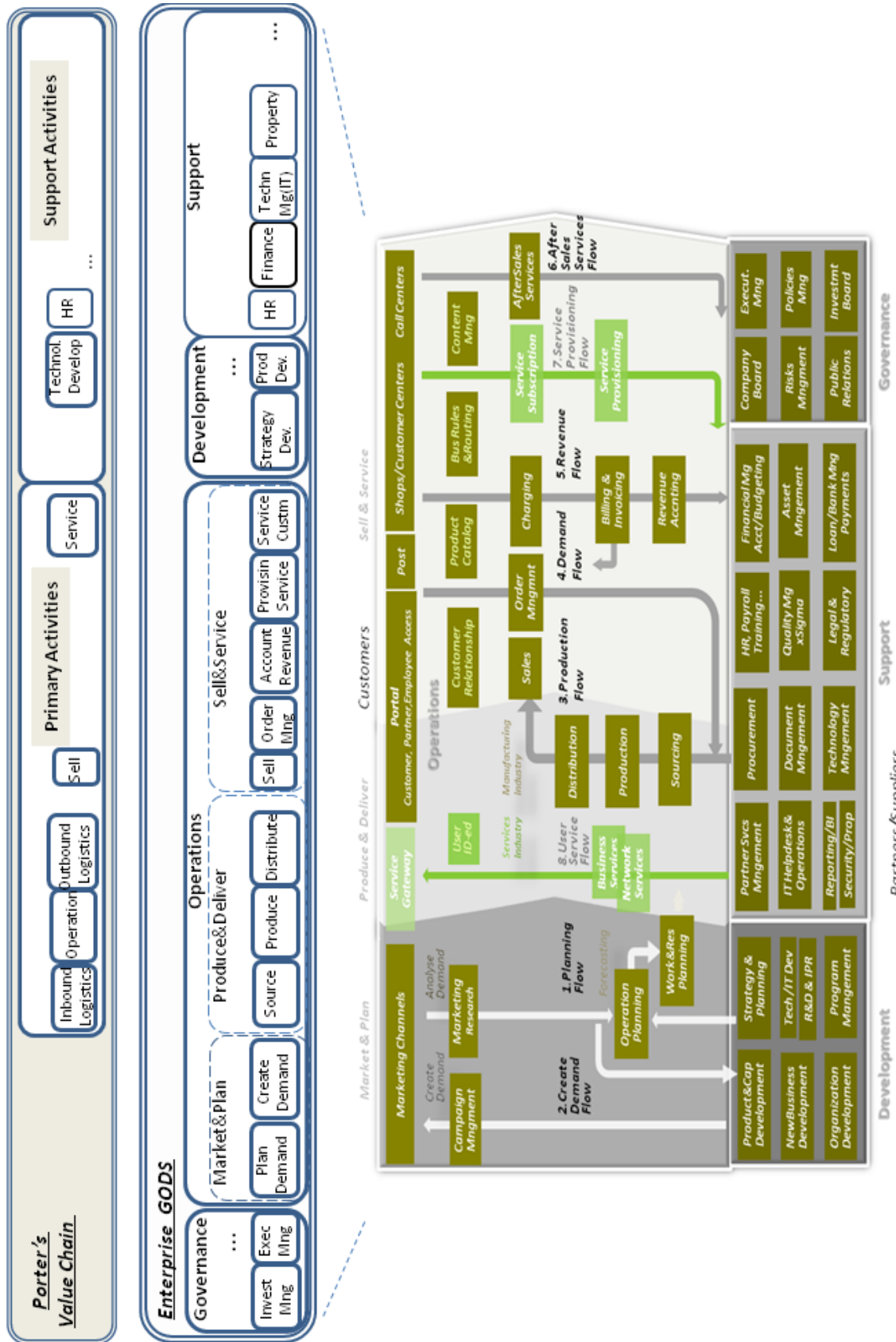
Figure 6. GODS mapping to Porter's Value Chain

Mapping to Business Process Frameworks

A comparison is carried out to such frameworks as APQC, VCG VRM and TM Forum's Frameworx.

APQC Process Classification Framework mapping

Typically and widely used for business benchmarking, APQC (see http://www.apqc.org/process-classification-framework) consists of process categories that logically stream from strategy specification and product development to product delivery, sales and services. Management and support processes range from human resources to managing knowledge and change.

"Develop Vision and Strategy" occupies an important role in APQC. Still it was not an explicit part of the original Value Chain primary/operational activities. It is not really part of the normal business cycle either, in this view, since vision changes only once in a while to affect many business cycles. Also, "Development of Products and Services" is performed only once for a few business cycles and in parallel to them.

The mapping in the picture shows that all APQC business process groups find their mapping on the generic architecture. The unmapped functions of the generic model may have been covered by APQC lower level processes. Mapping though, is not extended to lower levels of decomposition since they are too detailed.

APQC Petroleum industry is an instance of the APQC application with a specific taxonomy:

1.0   Develop Vision and Strategy

2.0   Acquire, Explore, and Appraise Hydrocarbon Assets

3.0   Develop and Deplete Hydrocarbon Assets

4.0   Develop and Manage Upstream Petroleum-Related Technologies

5.0   *- left empty to enable this comparison*

6.0   Develop and Manage Human Capital

7.0   Manage Information Technology

8.0   Manage Financial Resources

9.0   Acquire, Construct, and Manage Support Facilities and Non-Productive Assets

10.0   Manage Environmental Health and Safety (EHS)

11.0   Manage External Relationships

12.0   Manage Knowledge, Improvement, and Change

Petroleum is a version of the APQC standard framework. One can see that (2.0) Acquire, Explore, and Appraise Hydrocarbon Assets, (3.0) Develop and Deplete Hydrocarbon Assets and (4.0) Develop and Manage Upstream Petroleum-Related Technologies, represented at top level, are as important to the Petroleum industry as the exploitation operation. As such resource development activities (2.0, 3.0, 4.0, 5.0) may be extracted away from the GODS Development Function and operate as independent Value Chains in the Petroleum Value System. This often the case today when manufacturing is outsourced while the product development function becomes core. Nevertheless, the Petroleum framework places less emphasis on "Market and Sell" and "Manage Customer Service" activities that appear no more at the top level.

Value Chain Group's Value Reference Model

The Value Chain Group's VRM model consists of three large categories of activities: Planning, Governance and Execution.

All VRM activities map well on the generic model functions. As stated, VRM describes a process taxonomy that represents neither functions or capabilities nor end to end flows. VRM overall Planning and Governance processes control the whole Execution function. The mapping can be seen in the picture. The VRM Support function does not apply to the whole enterprise but solely the execution part.

TM Forum's Process Framework (eTOM) mapping

The TeleManagement Forum's eTOM framework is a process framework for the communications and digital media industries, consisting of three sections: Operations, SIP (Strategy, Infrastructure and Product development) and Enterprise Management. It maps well on the GODS generic model. There is no Governance function in eTOM. eTOM Fulfilment maps on GODS Provisioning; Assurance on Service Delivery; Billing is mapped to the Account Revenue flow. eTOM SIP (Strategy, Infrastructure and Product) aligns to GODS Development.

Mapping to vendor frameworks

The two approaches analysed are Microsoft's Motion and IBM CBM, Component Business Model. But do Motion and CBM represent capability or process maps? It is hard to distinguish between components, competencies, capabilities and processes in these two frameworks though.

IBM's CBM mapping

IBM CBM model is based on enterprise components and competencies. CBM rows appear to be typical Value Chain activities. CBM seems to appear in various but somehow different versions. A CBM component implements a competency at some level of accountability (Direct, Control, Execute). The "Direct" and "Control" rows may be inferred as Governance in GODS.

Microsoft's Motion mapping

Motion, at the top level, looks like a Value Chain. The Development activities appear as Primary, in an exception to Porter's Value Chain The mapping is straightforward, except for the Collaboration function which would map everywhere and anywhere since most human processes require human interaction and collaboration. Motion explicitly includes the Generate Demand function that fully maps on the Create Demand generic flow. Motion's Planning and Management (4) can be mapped on GODS Planning stream and Governance function.

Mapping to the Business Model Canvas

A Business Model (as per Osterwalder and Pigneur) is a way to configure your business to return revenue and value to stakeholders. It is not a business architecture in that it does not show components in interconnection. Still, a business model can be best analysed when mapped to a generic business architecture such as the generic model. The major elements of a business model:

1. "Customer Segments – who are your customers?

2. Value Proposition - what do you offer each of your client segments?

3. Channels - how do you reach each of your client segments?

4. Customer Relationships – how do you relate to your clients over time?

5. Revenue Streams - how do you earn money?

6. Key Resources – based on which assets are you running your business?

7. Key Activities - what key activities do you need to run your business model?

8. Partner Network - with which partners do you leverage your business?

9. Cost Structure – where are your most important costs?"

How does the generic Business Architecture support Business Models? The Business Model elements of Value Proposition and Cost Structure are part financial calculations rather than constituting components of an architecture. In brief, a business model describes a configuration of the business architecture, that is, of the processes and the organizational and technology resources implementing them. This configuration delivers the products to specific customer segments through selected channels and returns revenue and costs, as evaluated in the business model.
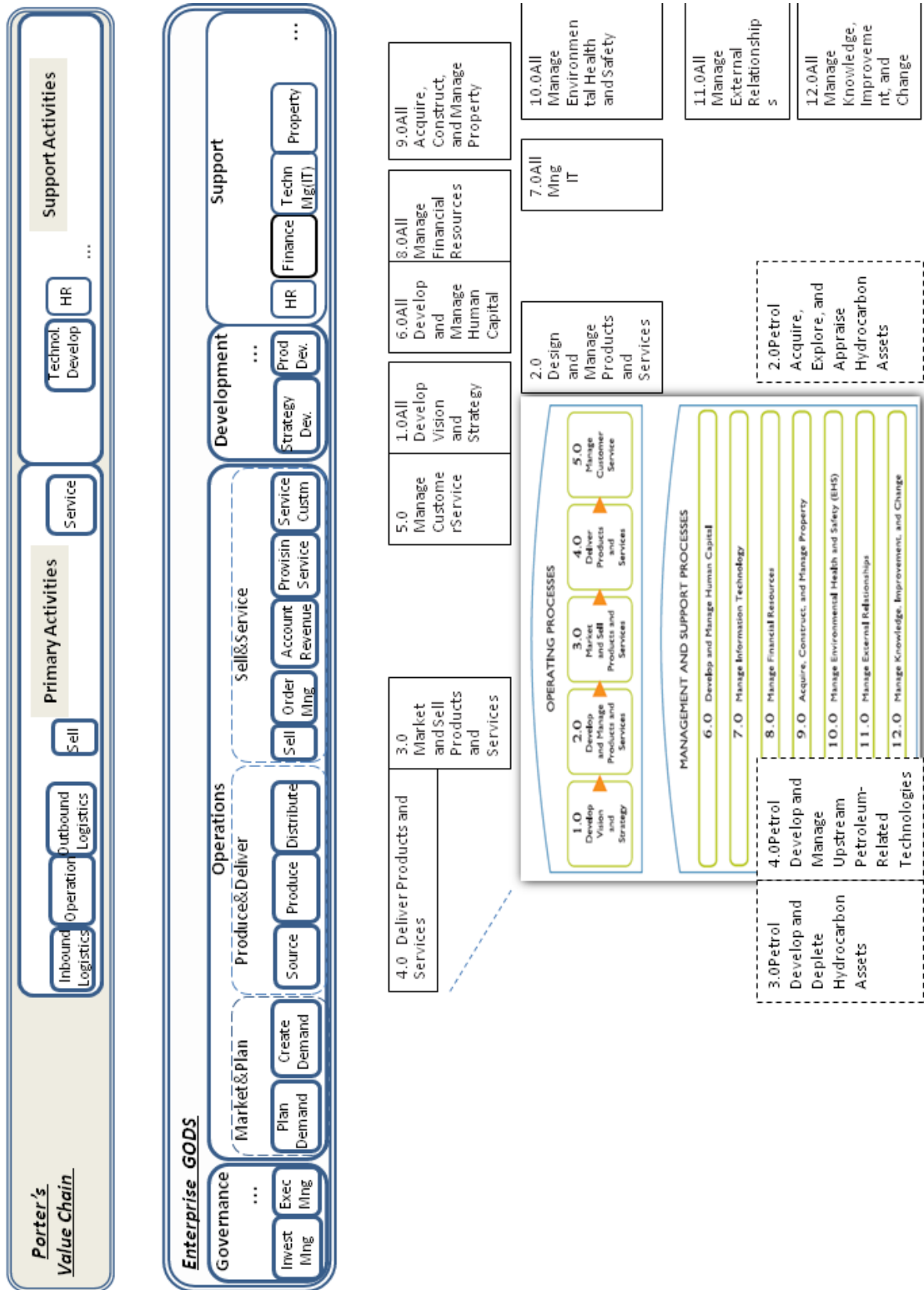
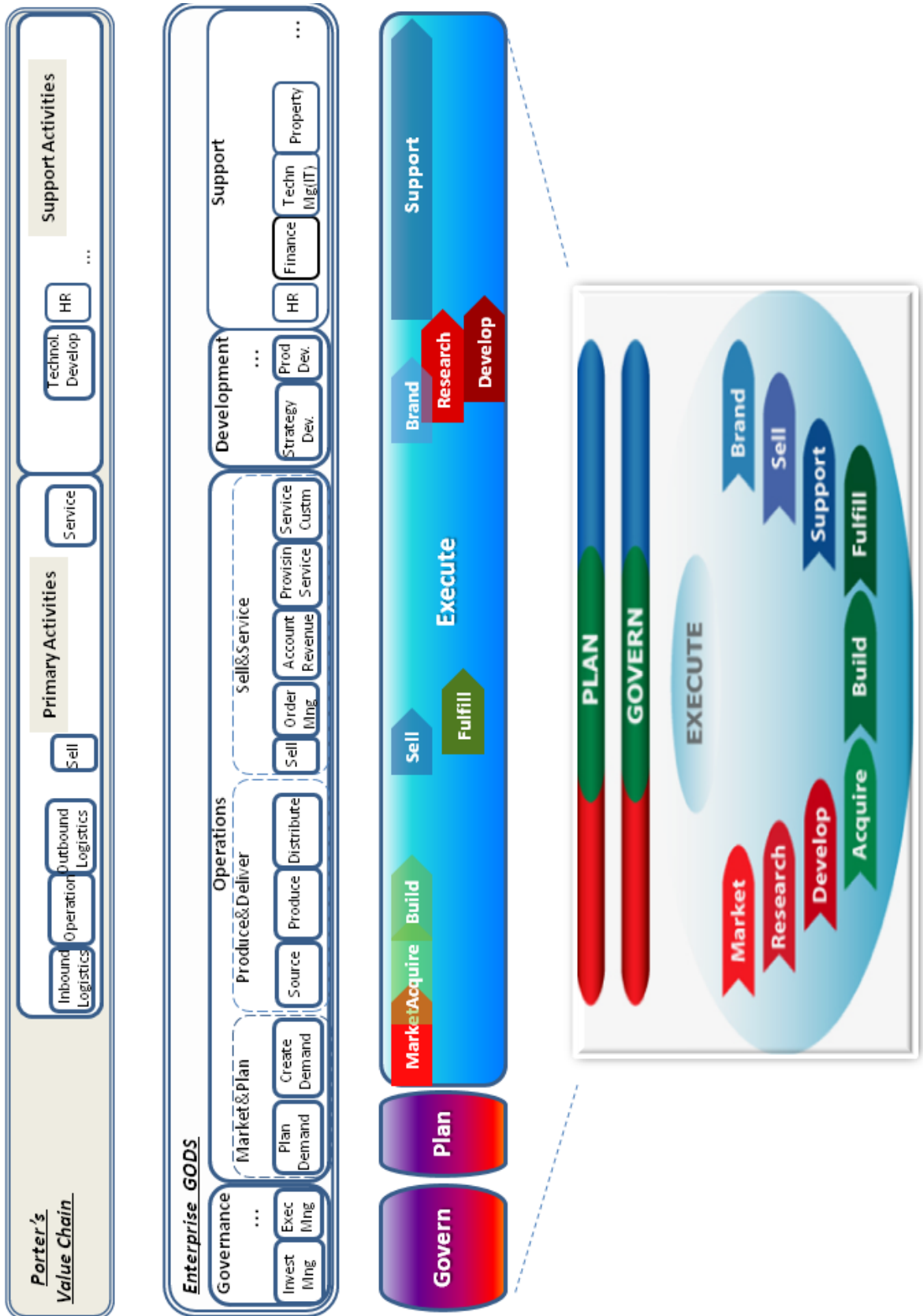**Figure 7. AQPC mapping on the generic business architecture**

Figure 8. Value Reference Model VRM mapping on GODS gBA
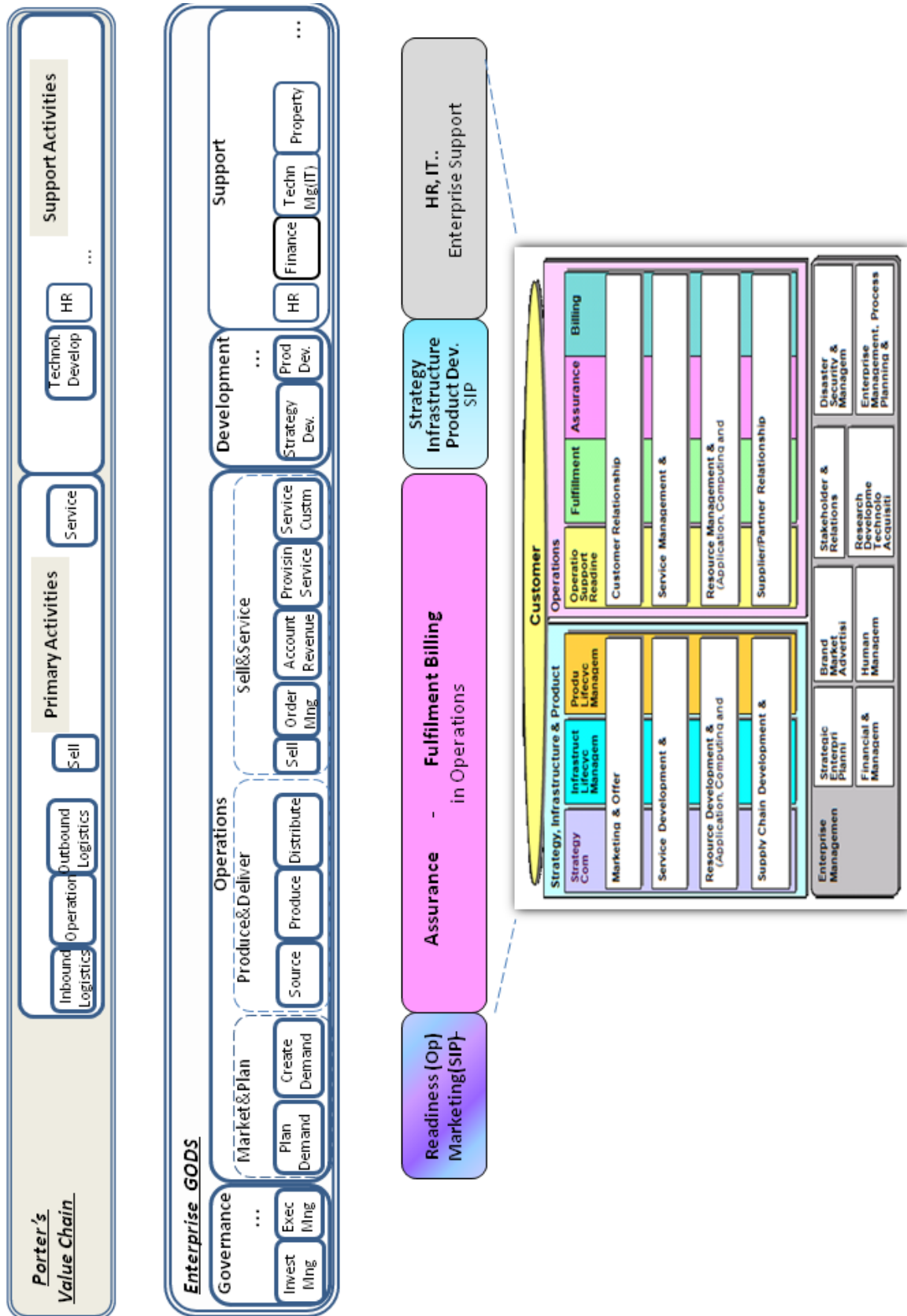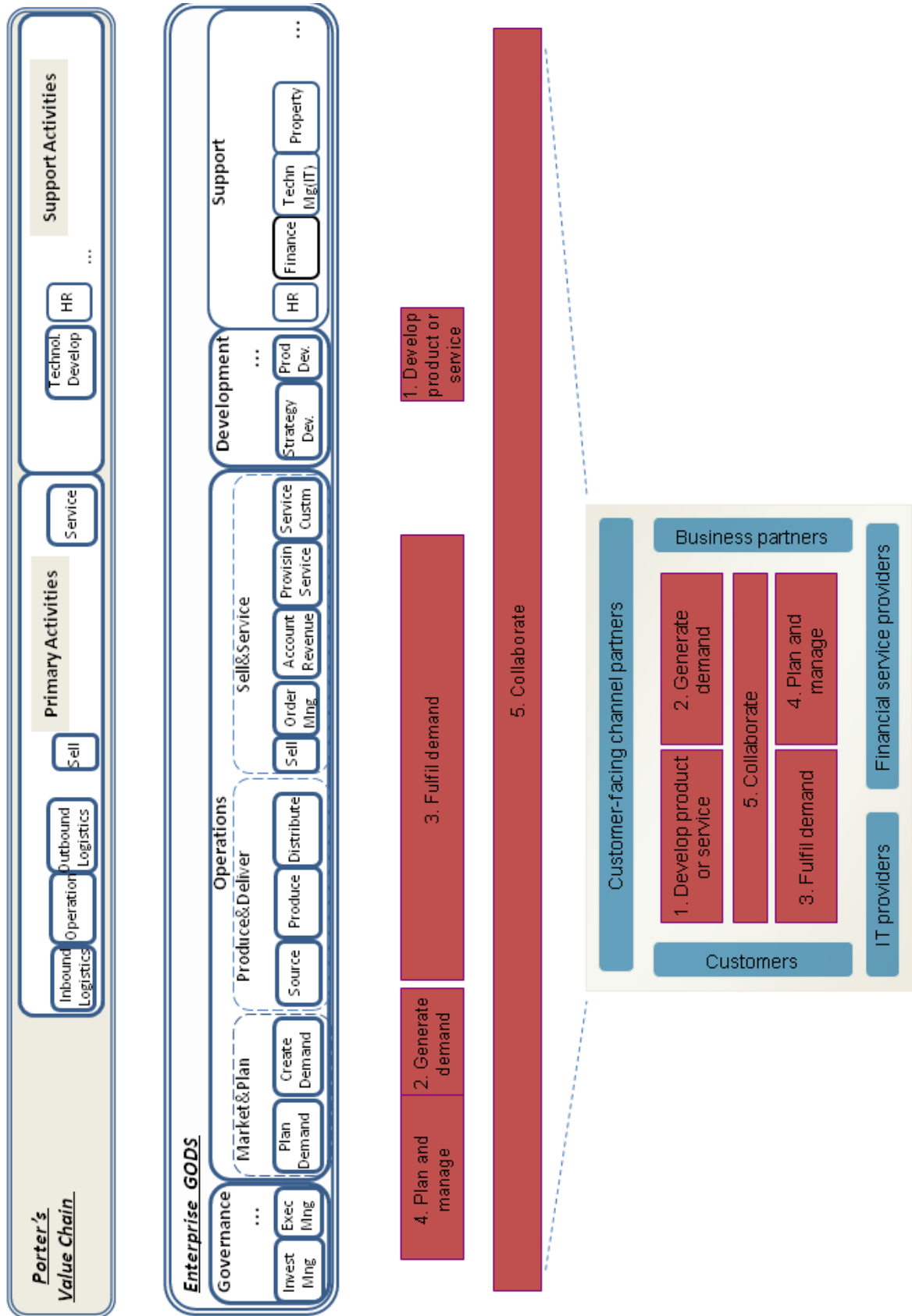
Figure 9: eTOM mapping

Figure 10. Microsoft's Motion mapping

Figure 11. IBM CBM mapping

Mapping the Business Model Canvas
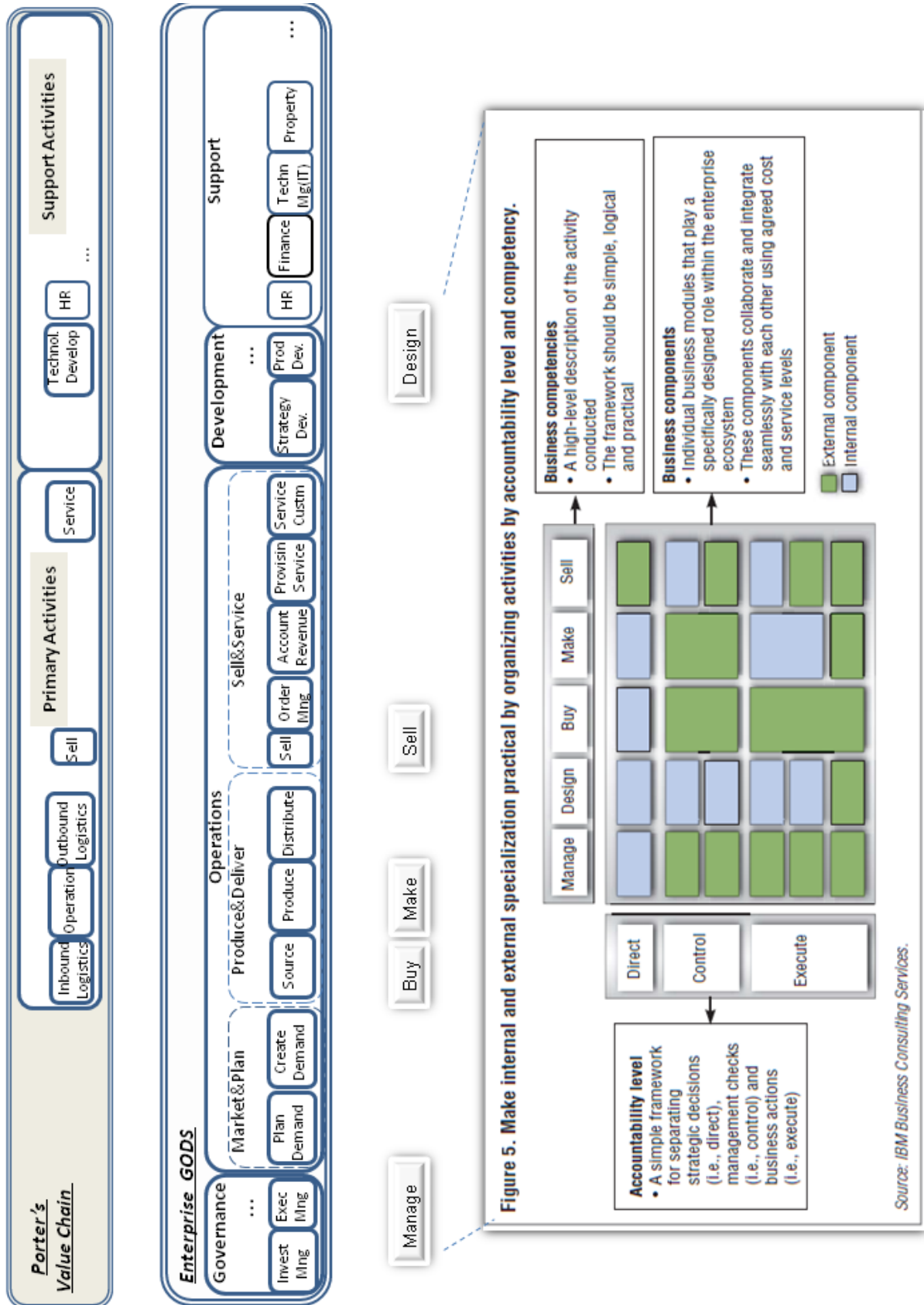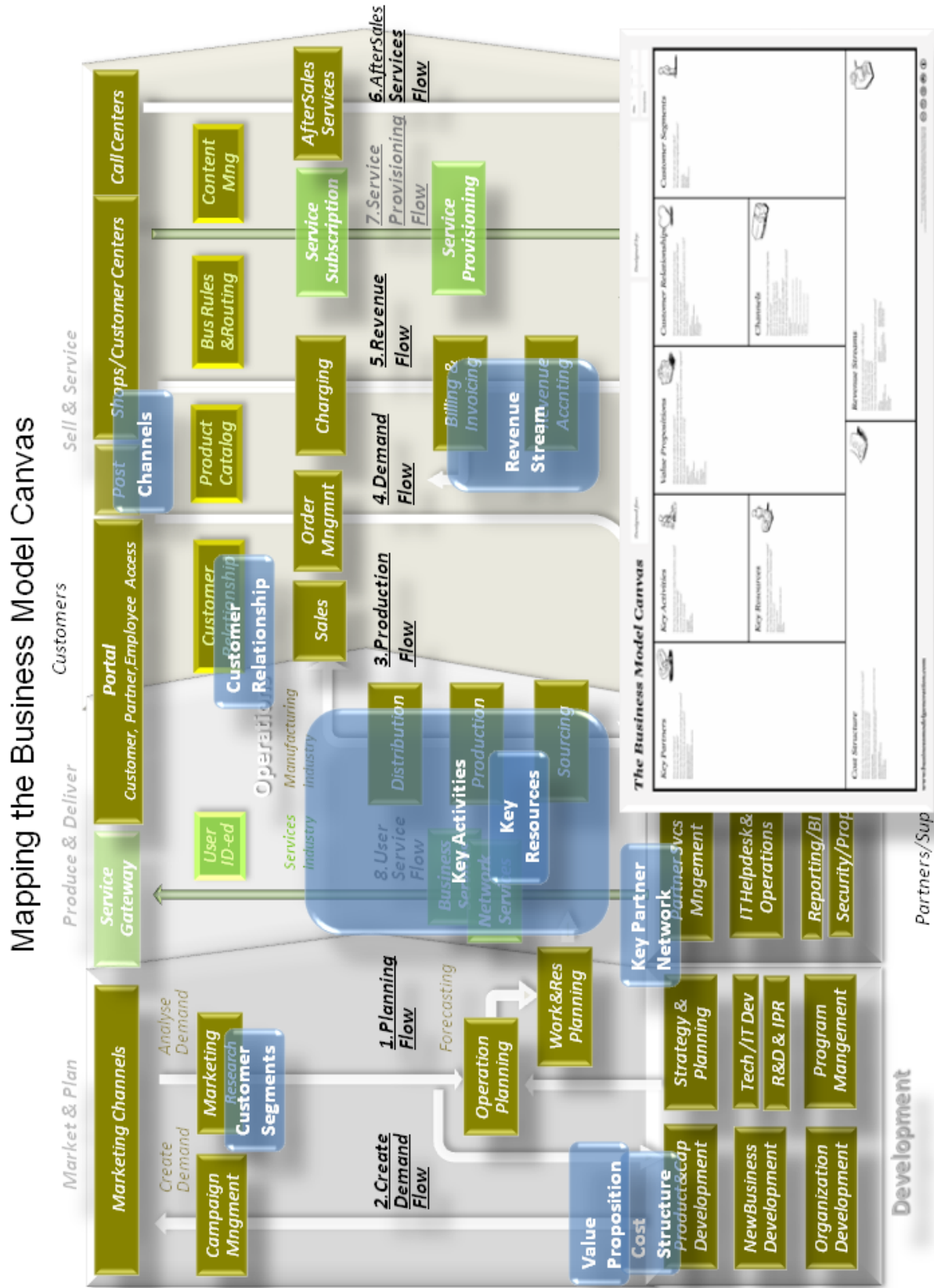

Figure 12 Business Model mapping to the generic architecture (business model Wikipedia)

Analysis

It is not clear what the difference is, in these various frameworks, between a *capability*, a *competence* and a *component* or between *capabilities*, *processes,* and *flows.*

As such, the entities in these approaches are hard to use in Enterprise Architecture modeling since no clear distinction can be made, for instance, between enterprise structure and behaviour.

Development activities are often mapped to Value Chain primary links in Microsoft's Motion, VCG VRM, APQC, IBM CBM… even though this appears to be a departure from Porter's Value Chain, where Development is part of Support activities. Still this may apply to some industry specific value chains. In GODS, the Development function is a separate function from both Operations and Support. The reason is straightforward: Operations and Development happen in parallel, in different time frames, rather than in sequence and as such they do not belong to the same business cycle. Still, a Development-Production-Sales extended lifecycle happens once in a while when a new product is first created.

Also Development became a Primary activity in itself for many enterprises while manufacturing continues to be more and more outsourced. As such Development, the activity to design the products and capabilities, may have its own Value Chain in the Value System.

Since similar processes are mapped at various hierarchical levels, depending on approach, and the comparison here is deliberately limited at the first level of a framework taxonomy, mappings may look sometimes imperfect and incomplete.

Conclusions

There are many similarities between approaches but still none of them has the same top level taxonomy even though at lower levels the processes may still map. That makes the comparison more difficult. All frameworks map on the generic model though.

The model represents an architecture because it consists of both *functions* in *flows* in interconnection. The frameworks of comparison consist solely of maps of components or processes.

Existing process frameworks typically exhibit a rather abstract process taxonomies that may not align well to the Enterprise structure, end flows and existing systems. But were they meant to? The taxonomies were drawn top-down with rather abstract criteria in mind. Take for instance "Manage relationships", while logically sound, runs into problems in practice since relationships are managed as part of the many business functions interacting with the stakeholders rather than centrally in a function or system. As such, these frameworks are not usually employed for business or enterprise architecture, even though they are often shown as boxes in diagrams.

Also, frameworks do not exhibit components in interconnections as an architecture should do and thus are not directly employable in EA. But they can, and are typically used for process inventories and benchmarking. Business people often model processes to automate them in BPMS. They employ process frameworks and quality improvement methods such as xSigma that work with value streams (business flows).

This generic business architecture expands the existing framework approaches by adding to the value chains used by business management, business capabilities employed in EA, and end to end business flows (value streams) of business improvement initiatives. In that the generic model renders the Enterprise picture as an architecture, i.e. components in interaction, in the standard sense. As such, enterprise stakeholders from EA, business management and process improvement disciplines can work together to discover, design and implement the business and the overall enterprise architecture.

Paul Harmon of BP Trends described three historical approaches of modeling the business. The generic business architecture integrates the key elements of each school as illustrated overlaid on Paul's picture.

- Business Management school since the generic model expands on the Value Chains, Business Models and Business Process taxonomies

- Quality Control and xSigma schools since Business Flows illustrate end to end enterprise processes as Value Streams

- Enterprise Architecture (IT) school in utilizing a Business Functions/Capabilities Maps to develop Enterprise Architecture
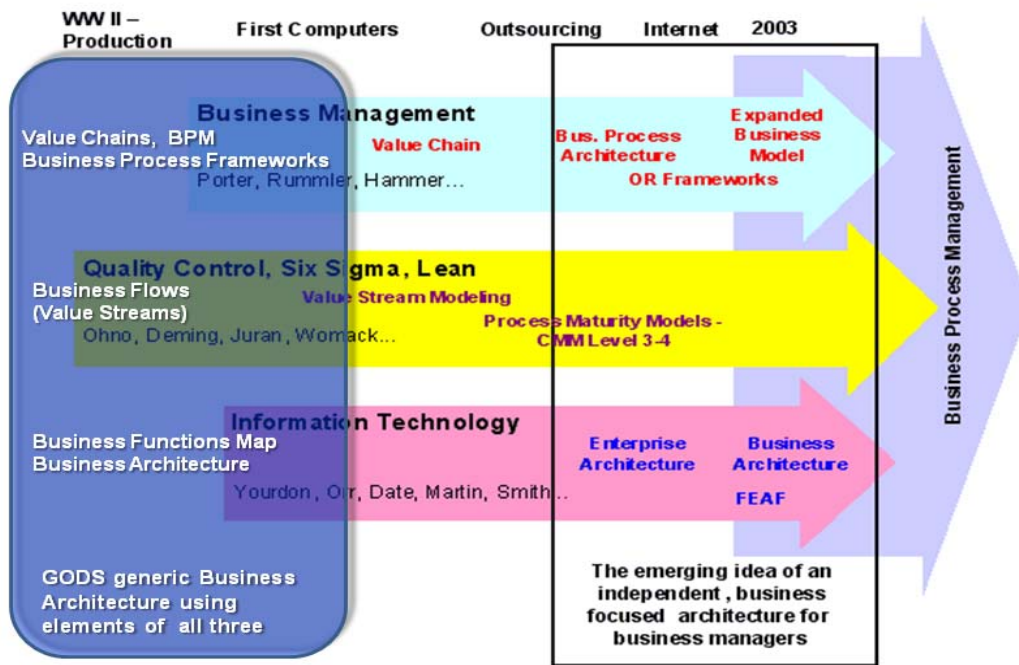
BP Trends Paul Harmon's The Three Process Traditions and Business Architecture

Figure 13. The generic model unifies the three historical business modeling approaches

The GODS single page generic Business Architecture is proposed as an approach to modeling a business that unifies the business management, quality management and Enterprise Architecture schools' approaches. The analysed business modeling frameworks can be mapped to the generic model and employed to provide process detail at lower levels. Transition to the generic model from any of these approaches is straightforward.

Ultimately, the generic business architecture is essential in building the customised single page business architecture of an enterprise which artefact may be used as reference for dialogue across the company. The model avoids the ambiguity of the process frameworks in that it allows your technology and organization architectures to be mapped to its components.

A business model (Osterwalder *et al*) is not a business modeling approach in the sense of a design of a business architecture but a way to deliver value (make profit) through a specific configuration of your enterprise processes and resources that provide a competitive advantage. As such this business model is not further employed in the comparison.

Business modeling frameworks comparison summary table

Value Chain	GODS	GODS Processes	APQC	APQC Petroleum	VCG VRM	eTOM/ Framworx	MS Motion	IBM CBM
Primary Activities Marketing	Governance	Investment Management			Govern			
		Executive Management					Manage and	Manage
	Operations	Plan Demand			Plan	Operations Readiness	Plan (4)	
		Create Demand			Market	Marketing SIP	Generate Demand (2)	
Inbound Logistics		Source	4.0 Deliver Products and Services	3.0 Develop and Deplete Hydrocarbon Assets 4.0Develop and Manage Upstream Technologies	Acquire	Supply Chain - Operations	Fulfil Demand (3)	Buy
Operations		Produce			Build	Assurance		Make
Outbound Logistics		Distribute						
Sales		Sell	3.0 Market and Sell Products and Services		Sell	Fulfilment		Sell
		Fulfil Orders			Fulfil	Fulfilment		
		Account Revenue				Billing		
		Provision Service						
Service		Service Customer	5.0Manage Customer Service					
Support Activity	Development	Strategy Development	1.0All Develop Vision and Strategy		Brand	Strategy-SIP		
		Product & Capability Development	2.0 Design and Manage Products and Services	2.0 Acquire, Explore and Appraise Hydrocarbon Assets	Research Develop	Product Develop. Infrastruc-ture.Devel op-ment-SIP	Develop Product and Service (1)	Design
HR	Support	HR	6.0All Develop and Manage Human Capital		Support	Enterprise Support	Collaborati on…	
		Finance	8.0All Manage Financial Resources					
Technology Management		Technology Management	7.0All Mng IT					
		Property Management	9.0All Manage Property					

		…	10.0All Manage Environme nt H&S 11.0All Manage External Relationshi ps 12.0All Manage Knowledge Improve-- ment.					

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8. Book **"**An Enterprise Architecture Development Framework**"** from Amazon, Trafford... http://www.trafford.com/Bookstore/BookDetail.aspx?Book=179897

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