

Modular Government: An Industry Perspective on Public Innovation

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Multinational corporations used to be about ownership and control. In the face of increasing worldwide competition and enabled by recent advances in information technology, some global enterprises have begun to cede ownership and control in favour of more flexible and responsive forms of governance. Instead of divisions and hierarchies, modules are the building blocks of these businesses. Decomposition into modules allows companies to use their own assets more effectively, to access unique external skills, to become more responsive to their customers and to lower their costs.

Government, similarly faced by threats of commoditisation and competition as well as rising costs, can adopt a strategy of modularisation as well. Modularisation allows governments to bundle their skills, access external know-how found in NGOs, commercial companies and even other governments, interact more deeply with their citizens and lower their costs. As a result of these strategies of decomposition, the worlds of government and enterprise will come together and form new combinations.

Modularising business

Threat of commoditisation

Reading some of the current literature about globalisation, one could arrive at the conclusion that global companies are enjoying some sort of golden age. Nothing could be further from the truth. A spectre is haunting established business, the spectre of commoditisation. Firms are faced with the fact that their products and services are available for a better price at a superior quality from a previously unknown competitor. Even corporate icons such as Starbucks, which pioneered a new business

¹ This paper does not express the views of IBM, only the personal opinions of the author.

category, are not immune.² As a response, global companies are looking for ways to innovate and introduce new products and services.

Innovation is not a trivial process, however. Clayton Christensen has described what he calls the ‘Innovator’s Dilemma.’ Strong barriers exist to innovation in companies, one being that new products and services often are competitive to the bread-and-butter businesses contributing to the vast majority of company revenues and profits. In addition, new products and services often require a different sales approach or initially do not meet the quality requirements of the existing customer group. (Christensen 1997.) The challenge is that new products and services often cannot be successfully introduced without changing the internal operations of the organisation – perhaps even radically.

How to build innovation into the DNA of organisations is one of the most interesting and active debates taking place among academics, business and government leaders today. One such recent discussion was documented by *The Economist* correspondent Kenneth Cukier. (Cukier 2007, 28) Different examples of radical innovation in governance were cited. Often, innovation was about the modularisation of production processes as well as the involvement of external partners and customers. As an example, John Seely Brown described the modularisation of the motorcycle industry in China, which allowed suppliers to work independently of one another without central coordination and led to a significant reduction in manufacturing costs.

Modularisation of production and the involvement of external partners is not a new phenomenon for many traditional product-based industries. Due to recent advances in Information Technology, modularisation can be applied much more widely also to services companies. ‘Rapid assembly,’ a collective approach to production and trusting customers as co-developers is at the core of the current Web 2.0 movement, as originally defined by Tim O’Reilly. One of the principals of Web 2.0 is: “Small pieces loosely joined – web as components.”³ Web 2.0 developers know that modularisation needs to be carefully set up and governance design is critical. In the words of one of the best thinkers of open source: “Smart data structures and dumb code works a lot better than the other way around.” (Raymond 1999, 45) Development work in the open source community can never start from scratch, there has to be a platform. The platform does not have to be perfect, but it has to show ‘plausible promise’ which will inspire the participants in the system. (Raymond 1999, 58)

To approach the modularisation of enterprise in a rigorous way, George Pohle and others at the IBM Institute of Business Value developed the Component Business Model (CBM) method. (Pohle, Korsten and Ramamurthy 2005) The CBM approach

² Early in 2007, a memo entitled “The Commoditisation of The Starbucks Experience” reached the press. The Chairman, Howard Schultz, sent an internal note to his employees warning that Starbucks was losing its uniqueness. It needed to regain some of the innovative spirit of the early days, Schultz argued, in which Starbucks had delivered to its customers a singular experience which could not be had anywhere else. Andrew Ward. “Why Schultz Has Caused a Stir at Starbucks.” *Financial Times* 26 February 2007, 21.

³ Tim O’Reilly. “What Is Web 2.0, Design Patterns and Business Models for the Next Generation of Software,” 30 September 2005. At <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>.

is not a process-based or division-based approach. Instead, it focuses on corporate activities and assets. CBM is a methodology that breaks up all work items that a company engages in into ‘services’ and then defines the assets required to successfully deliver the service. Each of these groups of assets is called a component and its service can be delivered inside or outside the company. For example, in many companies, there are duplicate procurement processes that exist in each business unit. Bundling the assets required to carry out procurement into a single component allows one module to service the whole company, thus eliminating redundant work and infrastructure. Each component has a different level of significance to a company’s strategy and operations. There are strategic, control and execution components. The key analysis which needs to be carried out is to determine which of these are truly differentiating for the company, which are supporting and which are commodity. By no means are execution components automatically a commodity, as the example of the Chinese bank below shows.

By looking at companies in terms of their components, interesting things can happen. Working with IBM, for example, a Chinese bank discovered that their internal document processing was extremely competitive, and it now markets this business component as a service to other banks. In addition, a modular approach can be instrumental in building deeper customer relationships. Many companies are prevented from engaging with their clients in direct and comprehensive ways by the fact that client relationships are owned by several different divisions. Encapsulating customer contacts in one unit allows the company to engage in a much more meaningful way with its customers.

There is no predetermined result to a CBM approach, in terms of which components should be retained and which outsourced. Some companies require a lot of internal depth, for example the luxury goods company Robbe & Berking, which has its own manufacturing capabilities dating back to 1874. In other cases, external participation is required – even in differentiating and core components of the company. A company should not be afraid of this, as John Seely Brown puts it: “learning faster actually trumps intellectual property.” (Cukier 2007, 24)

In governance design, incentive and trust are critical elements. This is emphasised by John Seely Brown and John Hagel, who cite how Li & Fung, the US\$8.5bn worldwide fashion and textiles supplier, never sources more than 70% of the output of each of its many suppliers so as not to make them become wholly dependent. But Li & Fung always sources more than 30% of supplier output in order to have enough leverage. (Hagel and Brown 2005) The Indian telecommunications company Bharti sources its technology from IBM and pays according to a flexible financial model linked to its own company growth.⁴ A large part of eBay’s value is in the reputation system enforced by the sellers and buyers themselves. This is often cited as an example of reputation systems in network-based business models. Bad reviews have an immediate financial impact on the seller as business moves elsewhere. But even

⁴ “Hungry Tiger, Dancing Elephant: How India is Changing IBM’s World.” *The Economist* 4 April 2007; IBM Press Release, “Bharti and IBM announce first-of-a-kind business transformation agreement in global telecommunications industry.” New Delhi, 26 March 2004.

eBay would not work without an internal group dedicated to fraud protection in its network. Understanding the complex interplay between incentives and trust in modular enterprises is where experience will be built up in coming years – much attention will be focused on designing smart incentive systems where players have less interest in subverting the system than in supporting it.

Global modules

Modules make possible new ways of working globally. While multinational enterprises are becoming truly global by integrating their functions across the world,⁵ some start-ups are global from the very moment they get founded by being integrated into global networks.

The 100-employee biotech start-up GNI Ltd speaks of itself as a “truly global network comprising the business development office in Japan (Tokyo); our R&D operations in Japan (Fukuoka), the UK (Cambridge), and China; our intellectual property activities in the US (San Jose); and our clinical trial operations in China (Shanghai).” GNI’s competitiveness is based on the mix of regulatory environments in these countries as well as the distribution of skill pools.⁶ The global activities of GNI Ltd may be enabled by IT and the internet, but it can work the way it does because global pharmaceutical companies are interacting with external biotech ventures more intensely in form of strategic partnerships than they did previously. (Burns, Nicholson and Evans 2005, 261)

One of the most frequently cited examples of a ‘Micro-Multinational’ is right at the doorstep of Tallinn University of Technology, namely Skype, with their Estonia-based development team and operations in London and Luxembourg. The most prominent venture capital funds in Silicon Valley, such as Sequoia Capital, have established offices in emerging economies such as China and India to support their fledgling ventures in realising global partnerships from Day One.

What is new about this development is not the fact that small companies are working world-wide, but rather the depth at which they engage. This is not an arms-length trading relationship with the overseas representative checking into headquarters every few months, but deeply connected research and development, marketing, sourcing and operations. The networks are internal as well as external.

But this logic does not apply only to companies, it is a social development. Richard Florida’s book *The Rise of the Creative Class* describes how local pools of well-educated entrepreneurial types are working in new global business networks. A

⁵ In 2006, IBM integrated its procurement functions globally and moved the unit to Shenzhen, China. This is the first time that the headquarters of an IBM corporate-wide organisation has been located outside the US. Chief Procurement Officer John Paterson stated: “In a multinational model, many functions of a corporation were replicated around the world – but each addressing only its local market. In a globally integrated enterprise, for the first time, a company’s worldwide capability can be located wherever in the world it makes the most sense, based on the imperatives of economics, expertise and open environments.” IBM Press Release, “IBM Shifts Global Procurement Headquarters to China,” Shenzhen, China, 12 October 2006. See also Palmisano 2006.

⁶ Interview with Christopher J. Savoie, Chairman and CEO, GNI, <http://www.gene-networks.com>, on 23 June 2006 at the Cologne Hilton Hotel in Germany.

few years ago, these people would have worked full time for a large company or in a government job. Today, the creative classes believe that job security is a thing of the past. Their objective is building up personal competence and know-how; their motif is autonomy and flexibility. (Florida 2002) It is precisely these global talents which both start-ups and global enterprises are seeking to access through new types of work arrangements and organisational structures.

Componentising government

No government can afford to become complacent. Not even Ireland, the ‘Celtic Tiger.’ Today’s headlines read:

- Sunday, 25 February 2007: “Economy faces major slowdown: EU experts.” *Sunday Business Post* (Dave Clerkin)
- Tuesday, 27 February 2007: “‘Misplaced optimism of the happy’ Irish.” *Irish Independent* (Bernard Purcell)
- Monday, 12 March 2007: “Better skills funding to help cut job losses.” *Irish Independent* (Staff Reporter)
- Thursday, 15 March 2007: “Job fears as Tiger takes a mauling.” *Irish Independent* (Tom McEnaney and Ailish O’Hora)
- Thursday, 22 March 2007: “Ireland must still offer something ‘distinctive’ to stay competitive.” *Irish Independent* (Pat Boyle)

Today, governments – especially in the West – are facing a number of serious challenges. As in large enterprises today, rising costs are a constant worry. (Cortada et al. 2005) For a number of years, declining birth rates, combined with an increased life expectancy, have contributed to the aging of populations across most OECD countries. As fewer workers support the retirees, aging populations will lead to a heavy ‘dependency burden.’ Economic growth of many Western countries is not strong enough to generate the income to keep pace with spending commitments. Available funds for infrastructure renewal, research and development and education are reduced.

Cutting investment in R&D and education can be detrimental in a knowledge economy. As authors from BRIE, the Berkeley Roundtable on the International Economy, argue, in a world characterised by ‘decomposing’ production and services, the primary role of government should be ‘competency based growth strategies’ focused on knowledge augmentation in areas from design to engineering and financing. (Zysman, Nielsen and Breznitz 2007)

The argument in this paper is that government expenditure cannot be increased to promote competency and growth. The funding is not there. New modes of government operations and a greater intensity of cooperation with external players and third parties are the keys to both greater competency and lower costs.

Governments have tested ‘self service’ concepts for a while. In Denmark, for example, companies have to send their invoices exclusively through electronic

channels. Although there has been objection to this and other ‘e-government’ measures in Denmark, the approach has been successful, saving the government €100m annually.⁷

Digital ‘self-service’ concepts for citizens and businesses are only the beginning. These concepts do not involve organisational redesign. IBM has carried out a number of consulting projects with the objective of assessing government functions using the CBM method. Component Business Model maps for various government activities have been drawn up, for example, the CBM for tax administration is shown below.

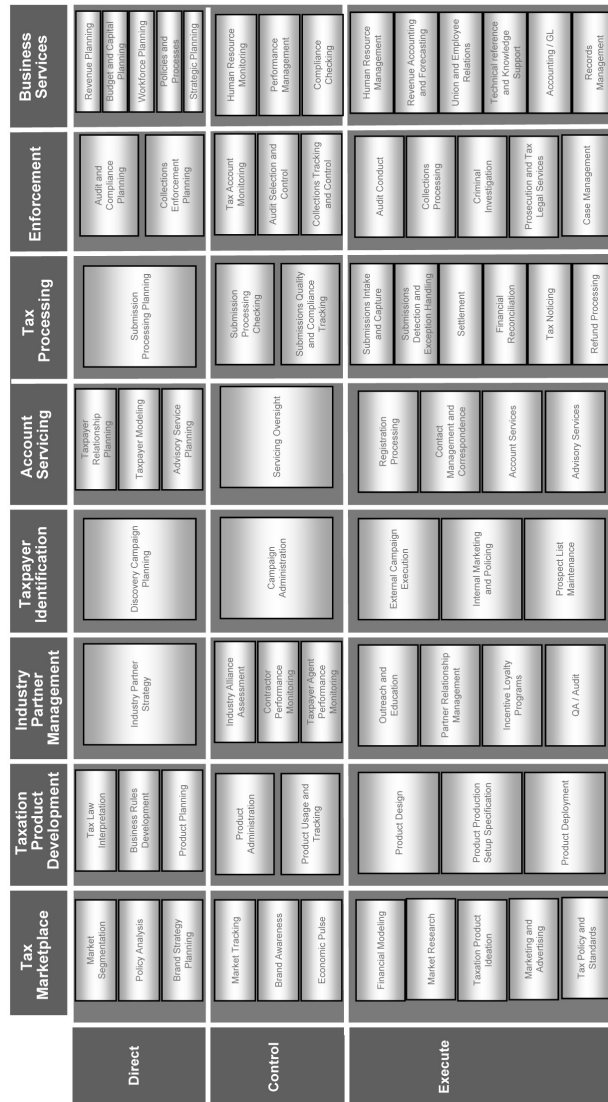


Diagram. IBM Component Business Model for Tax Administration [© IBM Corporation – Used with Permission]

⁷ The Economist Intelligence Unit. “The 2007 e-readiness rankings: Raising the bar,” 18. See also: The Digital Taskforce. The Danish E-government strategy 2007-2010, June 2007, Copenhagen. Web site: <http://www.modernisering.dk>.

One rationale behind the component approach is to enable a deeper involvement of external providers in the internal organisation. There are a number of external parties governments can cooperate with. One of these are other governments. The European Union, for example, could distribute its basic governmental activities much more than it does today. The old joke about what Italians, British and Germans do best has new relevance as country-specific strengths are shared, thereby lowering the cost of certain administrative services. Sourcing and sharing will also increase competence and innovation potential in the same ways as it does in enterprises. The governmental co-sourcing concept was developed by Bruno Frey and Reiner Eichenberger; they called it 'Functional Overlapping Competing Jurisdiction' (FOCJ). (Frey and Eichenberger 1999.)

There are a host of new players arriving on the political scene, NGOs, nonprofit and for-profit contractors. If integrated into government functions, they could also provide governments with benefits beyond cost reduction. For example, two government-backed funds in Germany, the Technologie-Beteiligungs-Gesellschaft (tbg) and the Kreditanstalt für Wiederaufbau (KfW), engage in co-financing and risk participation jointly with private equity investors. A very useful cooperation ensues, which builds on the investment and business know-how present in private funds. (Waesche 2003, 118-121) Government by itself is not particularly good at identifying growth opportunities. If nanotech and wind energy are the right areas to back, then private investors will also be willing to invest in these sectors.

Independent think tanks – a relatively new phenomenon in Central Europe – offer a global perspective, are involved in analysing information and provide policy recommendations. Some are directly set up as international networks, such as The Stockholm Network. Some can be instrumental also in executing ideas. A think tank currently being launched in Berlin, for example, is setting itself up to act as a private fund for public policy innovation. It will serve as an intermediary between financiers and new initiatives, providing transparency, accountability and a tracking of milestones. These types of NGOs are acting like the enterprise orchestrators described in the previous section, coordinating third parties and combining diverse and global sources of know-how. As in the business world, incentives and trust are critical here too, and new designs and mechanisms will evolve.

There are components that governments must carry out themselves. These are the functions that are core to democratic legitimacy or the separation of powers. As in the corporate world, the act of identifying, delineating and categorising components in itself is a critical activity and poses the question of what the organisation is fundamentally about.

In a knowledge economy, one important task of governments is to increase the level of know-how and competence within its own administrations, in the external organisations it engages with and in the economy as a whole. However, government resources are limited. Global enterprises are facing similar innovation and cost challenges today. These businesses are using a component-based governance approach to bundle their skills, to actively involve external parties and to deeply engage with their customers. Governments can adopt these modular governance designs as well.

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