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Collaborative Business in the Digital Economy

Shifting towards People, Partners and Processes

A Discussion Document

Contents

1 Synopsis

There are many pressures on the enterprise today, but two major trends are the globalization of mainstream markets, resulting in commoditization of product and price, and the rise of specialized markets driven by an increasingly "online" world, which make previously scattered buyers accessible via well-defined, recognizable "communities." Aggregating the number of buyers in these communities represents a market-place potential at least as large as previously mainstream markets *(example: the air travel industry – see Appendix A).* This is the concept of the "Long Tail," which states that businesses should be positioning to "sell more of less," or, to put it another way, expect to produce more varieties of their product to serve different markets to achieve higher margins as well as overall revenues, as opposed to higher volumes with lower margins *(example: Amazon - see Appendix A).*

This change requires Business Model Innovation, i.e. shifting from "Reactive" and "Proactive" to a new "Interactive," business model to engage with these new community markets. The "Interactive" business model establishes relationships between the supplier and the community, which allows for product variations to be created by a "pull" demand with little of the costs and risks associated with the traditional "push" marketing of products *(example: Threadless - see Appendix A).* However, an "Interactive" Business model requires the business architecture, functions, systems, roles and responsibilities to be changed in the same manner as the existing enterprise, is unlikely to be able to cope with such a change. This could be achieved by an overall Business Transformation or by establishing a separate division *(example of Toyota Scion - see Appendix A).*

All of these changes were being created by, and continue to be driven by, technology. Most of all, the technologies that are loosely described as Web 2.0 are creating a different environment for business as well as for markets and organizational business models characterized as "Enterprise 2.0" *(example of Westpac - see Appendix A).* The relationship between the capabilities of Web 2.0 and the capabilities of an Enterprise 2.0 or an Agile Enterprise, has led to the concept of 'Business Technology' (BTech), as being distinct from Information Technology (IT). Just as IT was used to redefine the use of the technologies of PCs and networks to change business architecture from hierarchical departments to matrix working and to introduce Enterprise Resource Planning, so BTech defines the use of Web 2.0 technologies to change business models and architecture around "interactive" working.

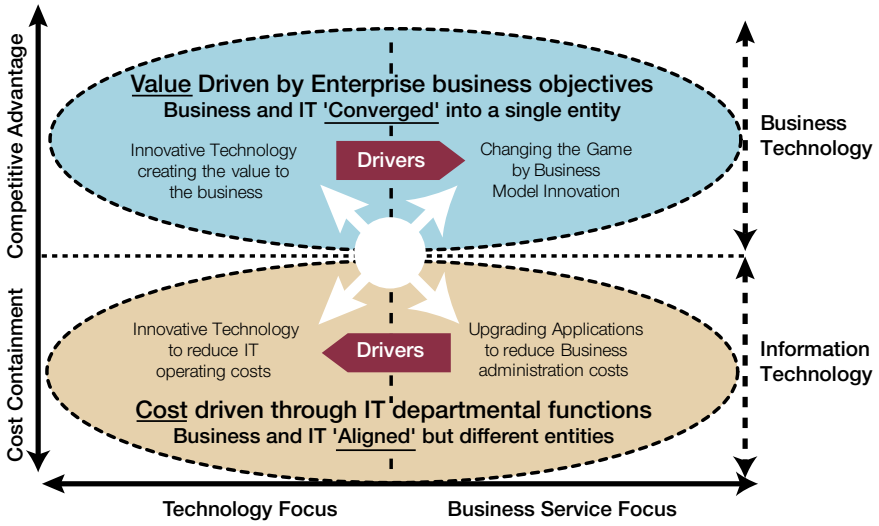
Enterprise managers need to build a vision of how they want to use technology to change their business—a TechnoVision (a methodology developed by Capgemini). TechnoVision breaks down the technologies into seven clusters, each of which has the capability to transform an element of the enterprise and its Business Model *(example: Phillips - see Appendix A)* to provide the detailed assessment of what could be used, as well as why and how it could be adopted to form a complete transformation. Mainstream technology vendors are delivering many of the new capabilities as extensions to their existing product ranges,

allowing BTech solutions to be built over existing IT solutions using Service-Oriented Architecture (SOA) as the connecting and integrating layer.

To deliver such changes, combining technology and business requires new skills and methods at an implementation level. The ability to understand what is possible from technology as against the business goals, in order to define a requirement and its value to the business, requires different forms of accelerators from those used to deliver comparatively well-understood requirements using IT. Rapid Innovation (RAIN), as well as new techniques in the form of Rapid Design and Visualization (RDV) (both of which were developed by Capgemini) that allow immediate feedback on the development, are required to support a continuous stream of small business changes that collectively drive and support an "Interactive" business model.

Overall, a conscious decision is required to understand how to construct a governance model that organizes the responsibilities, functions and justifications, in order to grasp the opportunities.

Organising Enterprise Activities and Governance



2 Introduction: The Focus is Changing

Business competition continues to become stronger, requiring product offerings to be made more variable as well as changed more often. This leads to the range, and even the type of competitors faced becoming more diverse, and the resulting new markets characterized by being in a state of continuous change. With so many more choices, customers are now more demanding and increasingly want it "their way." All of these factors lead to extreme pressure on the time frame available to make a competitive response as well as to "rewire" the way an enterprise works, i.e. changing its Business Architecture. On the technology side, the focus needs to move away from automated "transacting" procedures that record deals won, to working in a new way, where business is built on the successful use of technology that supports "interacting," optimizing opportunities to win new business.

The IT Department's role, focused on using Information Technology to integrate the activities of an enterprise back office which supports internal "transaction" recording and usually reports to the CFO, needs to change. A new role is developing in the front office, supporting externally-driven activities that create revenues through customer interactions driven by Sales and Marketing. A similar external requirement is also necessary for effective working with various types of Business Partners and Supply Networks.

These changing demands call for a re-focus, from the *internal* perspective around the efficient use of an enterprise's resources by Enterprise Applications, to an *external* perspective of how to successfully combine the capabilities and expertise of People and Partners by using a new generation of technologies that bring with them a different approach to integration. Quite unlike the "fixed" architectures that integrate computer systems together internally, this new generation of integration has its own architectural model, which is lightweight and agile, and designed to withstand frequent change, often by business managers or even users. The architecture of these models owes more to the organizational and operational business model than to the constraints of IT systems and data integrity, and is based on a flexible Process.

Indeed, it has become increasingly difficult to know how to separate business activities from the new technologies creating this new World, so much so that an increasing number of people advocate that this is no longer the province of Information Technology, but rather of Business Technology (BTech). This is an important distinguishing point in much the same way as the term Information Technology, or IT, was used in the early nineties to describe the shift to PC, networks and client-server architecture from the existing mainframe and mini generation managed by "Computing Services." This same shift also required the Business Model to change from the traditional hierarchal department-centric workflow to a more flexible Matrix model based around the use of common and shared information, and most of all, the use of Enterprise Resource Planning (ERP).

The new technologies are a ubiquitous part of business. Everyone and everything of value is now almost certainly connected by the Internet. At the same time, the use of the Web has evolved, and continues to evolve, into a wide-ranging series of capabilities furnished by a huge number of different elements, all

managing to work within a set of both formal and informal standards. Users, business managers and enterprises have been quick to grasp some elements, opportunistically creating what has been described as a "technology rat race" as an inevitable part of successfully meeting and beating the competition. The challenge in many cases is not to encourage the uptake of the technologies by local users, but instead, to manage an integrated and empowered enterprise, gaining business advantage and competitive lead.

Currently, the real power is held back by fragmentation. Individual teams within an organization have frequently discovered how to create their own advantage by working differently from each other and adopting their own local working practices. Unfortunately, this often leads to the adoption of different technology products by different groups, thus preventing the advantages being pursued across the enterprise. Also, whilst some users are achieving greater leverage, others are effectively frozen out through an unfortunate lack of knowledge. The true advantage of being able to maximize an Enterprise's People and Partners expertise, address specific situations and win business with customers is being lost. Worse still, it's also possible to see the uncoordinated use of new technology costing people-time, as Instant Messaging and Social Networks add to the distractions of too many emails.

In many ways, the whole situation is an uncomfortable reminder of the days when the PC first appeared, fuelled by user-enthusiasm, financed and supported by departmental initiatives, and ultimately creating the need for an enterprise-level reorganization of both working practice and technology to restore a coherent and cohesive business environment. This meant the formal creation of the IT department led by the CIO, with new responsibilities and roles. It went hand-in-hand with the adoption of new client-server technology architecture, standardization of desktops, and introduction of ERP systems. For some time, those enterprises that succeeded in applying these changes first were able to gain real business benefit in the form of competitive advantage and seized market opportunities because they could organize their internal resources better.

Today, the first generation of "e-commerce" technology is mature, and is a natural component of everyday business thanks to the creation of multiple channels-to-market. This paper looks at the rise of more sophisticated forms of doing business that make full use of the medium, technology and the expectations (or capabilities) of an increasing number of buyers. The term "Interactive Business" is used to capture the feel of using Web 2.0 technology with its strong personal and communicative capabilities, to provide a "full service" environment more reminiscent of personal service in a high quality departmental store than a content-driven website.

This change starts by examining "interactive" ways of optimizing a business transaction in terms of choices that can be offered to capture new markets as well as examining emerging approaches using lightweight architectures. These combine business and technology that business managers and users can understand and operate to create, maintain and edit their requirements, and finally move to processes required to deliver.

3 Interactive-based Business

Existing go-to-market business models can be broadly classified as being based on either "Proactive" or "Reactive" patterns. The term "Proactive" is used here to define an attempt to lead a given market into a new phase by pushing an innovative product. The aim is to surpass competitors that cannot offer a matching product offering and gain market share. The Apple iPod might be thought of as a good example of this approach. The term "Reactive" applies when competitors are forced to respond to a new market phase by rushing to introduce their version of the product, such as Samsung launching an MP3 player. Both strategies assume that a given market will consist of moments of change followed by a steady state that provides a period to harvest a return on a new product.

Much effort has been expended to look at ways to get to market quicker, both to capitalize on a new and innovative product in a "Proactive" manner, or to ensure competitiveness is restored rapidly through a "Reactive" necessity. However, it is also recognized that there are further challenges: The time between market changes is decreasing, leading to a noticeable increase in product changes or new product introductions in a given time span; at the same time, the cost of devising a new product is rising, so multiple parallel-channel strategies become necessary (rather than sequential go-to-market activities) in order to harvest returns before the competition reacts.

Lastly, but perhaps most significantly in terms of the requirements for BTech, the cost of marketing so many new products in such competitive markets is becoming a real concern. An article in the UK Financial Times online, *'Can Web 2.0 Rebuild Your Brand'* (26 June 2008), commented that the rise in revenues for many product markets (shown in percentage terms) was all too often lower than the rise in expenditure on marketing. The article suggested that this was, in effect, as good as paying people to buy those products.

The "Proactive" and "Reactive" approaches are both based upon the traditional idea of a defined and "standard" product targeted towards a recognizable market of sufficient size. This could be described as a "push" model, where the seller takes the risk of devising a product for a given market in expectation that it will sell enough to recoup costs and make money. Today, such markets are extremely vulnerable to globalization, where the lowest cost player working from the lowest cost location uses it as a lever, together with industrialization techniques, to win. The counter to this is to focus upon niche markets, using the medium of the Web to identify and service the niche effectively at an appropriate cost—i.e. the "Long Tail" approach.

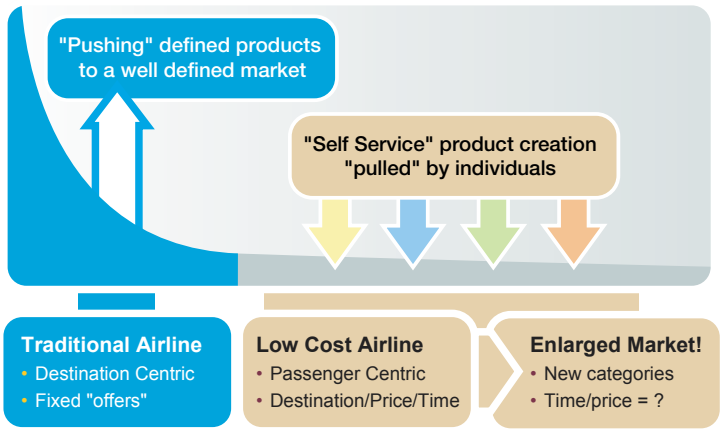
It is this that forms the basis to rethink go-to-market business models in order to embrace "Interactive" as a "pull" mechanism to reduce risk, cost and time to service a whole series of niche markets. An Interactive approach allows the buyer to work with the seller to define what they want to buy, and perhaps even the price and delivery.

An obvious example of this in the Services sector is the revolution that has hit air travel, starting with low cost airlines and working its way through the whole aviation sector over little more than 10 years. Low cost airlines made the basis of their competitive advantage the ability to "Interact" with prospective customers in order to mutually agree on an optimized deal for each and every customer using the variable factors of price, time and destination. The result made the

air travel market both more affordable and accessible for prospective travelers, leading to an increase in the overall size of the market by adding many who would not have traveled before.

This is an excellent example of the “Long Tail” effect as various niche groups, such as grandparents, started to travel to see their children and grand children. In addition, it is easy to link it to the marketing of niche activities or events (such as football fixtures) that can bring two cities on to the route map of a low cost airline. Consider the difference in the “value” of a fare for a football fan desperate to watch his team play an away match, versus that of a casual traveler who might yearn for a weekend break, but only if the price is right. There are other benefits to this approach too, as it becomes possible to increase the menu of margin-creating options over the basic product, with seats offering more leg room, food, use of lounges, etc., all of which can generate additional revenue.

The Long Tail



The ‘Long Tail’ was used by Chris Anderson in October 2004, to describe the niche strategy of businesses, such as Amazon.com, that sell a large number of unique items in relatively small quantities.

However, the concept of a frequency distribution of a ‘Long Tail’ has been studied by statisticians since at least 1946 around the distribution and inventory costs of businesses, to allow them to realize significant profit out of selling small volumes of hard-to-find items to many customers, instead of only selling large volumes of a reduced number of popular items. The group of persons that buy the hard-to-find or “non-hit” items, is the customer demographic called the ‘Long Tail’.

Given a large enough availability of choice, a large population of customers, and negligible stockingand distribution costs, the selection and buying pattern of the population results in a distribution curve, or Pareto distribution, i.e. 20/80 split, where 20% of the market is served currently by 80% of the offered product.

The key ideas of The Long Tail are all laid out in Chris Anderson’s book: ‘The Long Tail: Why the Future of Business is Selling Less of More’.

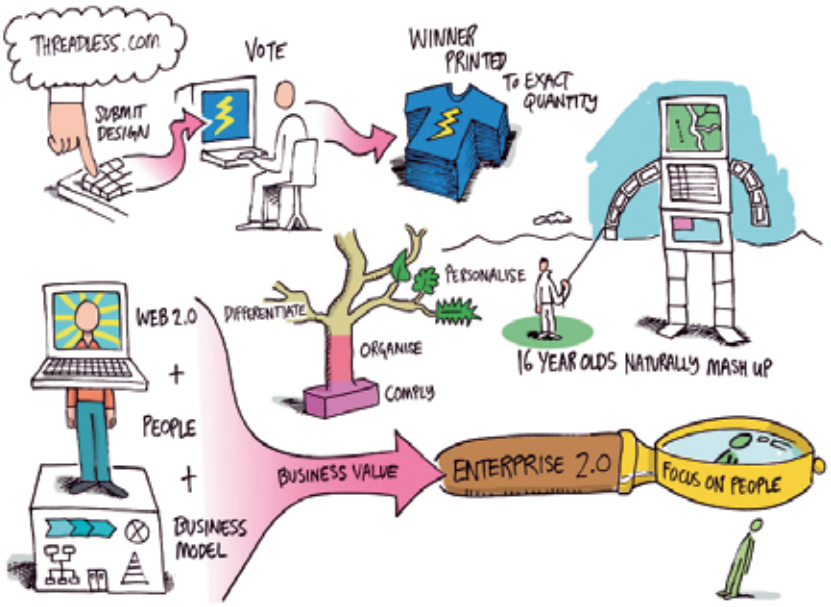
Most important of all, this can be achieved without increasing cost; in fact, it will be more cost-effective over a traditional airline operating model—a point grasped by the traditional airlines as they too moved online, attempting to make themselves part of this new market through increasing their abilities to Interact with their prime market of business travelers by allowing them to choose their own seats, preprint boarding passes, etc. Finally, the entire Air Travel sector has shifted to embrace the online Interactive market, with paper tickets phased out on the grounds of operational efficiency and no longer being required in today's society of web-connected consumers.

The challenge in adopting an "Interactive" business model is to identify existing assets that an enterprise possesses and consider how they could be reused as flexible ingredients that suit different market/customer interactions (e.g., airlines have flight schedules and pricing not as fixed factors, but as flexible assets that can be combined with additional services such as extra charges to handle luggage, etc.). This process is often referred to by venture capitalists in connection with Web 2.0 startups as the "Monitorization of Assets." This is one important difference from the dot-com boom or bust period, when the assumption was that creating "eyeballs" (or volumes) was enough. Now the focus is firmly on creating assets that can be used to create revenue and profit.

Similar examples can be found in other markets where BTech—the combination of a new Business Architecture with new Technology capabilities to redefine a Business Model and go-to-market capabilities—has been applied. As **www.threadless.com**, a well referenced and highly successful enterprise selling clothes using an Interactive model says: *"without you, there is no us."* to its loyal community of customers and partners from whom it gains its "pull" demand for products. In contrast is the traditional website of Zara—much used as an example of good practice in the retail clothes industry and based on a "Proactive" push model through its shops and web site.

The challenge for businesses today is that *Globalization* is meeting the *"Long Tail"* in a way that is extenuating the two extremities: markets and products. Both Globalization and "Long Tail" are the results of technology changing the characteristics of the business world, and, as a result, redefining both business models and go-to-market activities for success in this new world. The mid-ground of traditional business within a traditional market—that is based on a mixture of local brand and geography—is where both sides will find their additional revenues at the expense of the business that currently occupies this space.

Case Study



Threadless an 'Interactive' business

Started in 2000 as a web design competition Threadless has grown into an online business built around its Web 2.0 Social Community through which its customers collaborate with each other and Threadless on unique designs for T-Shirts. Originally intended to be nothing more that a social network the increasing demand for producing the designs led to Threadless becoming a rapidly growing successful business using the slogan; 'without you there is no us'.

Viral marketing helps those interested in Tee Shirt fashions to find the community and the size of the business continues to grow remarkably with no sales or marketing costs. Neither are there any design costs or unsuccessful products, Threadless makes what people want to buy through operating its Long Tail business model and making sure that 'interaction' and 'pull' are at the centre of its activities.

Its continued success and growth has led to a spin-off in operating its first store in Chicago but its Web community objected to the lack of community and interaction inherent in a conventional retail store based business asking for no further stores in order to preserve its special business model.

4 The Myth of Unassailable Positions

If it seems unlikely that major corporations and well-known local brands can disappear, then the record in recent years shows the reality to be somewhat different, with a number of companies that were listed in Fortune 500 no longer in existence. A more instructive example is to follow the way in which changes have affected the Music industry as well as other organizations that would conventionally be considered unassailable by virtue of their market share and resources, which bar entry to newcomers.

The Music industry has already seen four evolutions of the online market, starting with Amazon challenging the traditional stocking model of shops by offering a greater choice of products, delivered to the door at a better price. The innovations in the process towards "Interactive" were to personalize purchases, with the "others-who-bought-this-also-bought" method of suggesting products to cross-sell or up-sell and allow customers to provide feedback on products purchased for the benefit of potential customers. This was in contrast to the online experience of traditional booksellers who chose what they wanted to promote to their prospective customers rather than allowing them to decide on the basis of recommendations from other experienced consumers. Amazon has continued to add innovation, choice and interaction to its offerings and has been rewarded with growth in the region of 30% per annum. Amazon is also continuing to expand across more and more niche markets, combining globalization of the brand and resources with "Long Tail," in its abilities to find new markets, as well as in increasing the interactivity of its offerings.

Apple initially could have been thought to have chosen the "Proactive" approach to innovate the market through its combination of iPod and iTunes. The obvious innovation was to sell a small device (the iPod) offering large memory space and hence greater choice for users to store more music they could listen to. But the real innovation was to create an entirely new market based on the supply of music through an "Interactive" service: a market that Apple could effectively dominate through the combination of the product and services. The introduction of "downloadable" music for the mass market was the turning point in the conversion to an "Interactive" market that breached the unassailable position of the existing major music industry enterprises whose previous market model and strengths turned out to be their weaknesses when exposed to the new "Interactive" market model.

In the proactive and product-oriented business model enjoyed by Music Industry leaders in the past, big resources had been required to locate potential top-selling acts, record their music, produce and distribute CDs, and most of all, to promote artists to gain exposure and sales. To recover the cost of all these efforts, the price of a CD had to be high, yet most people didn't want to buy an entire CD; rather, they wanted the flexibility of just listening to select tracks of their choice from an album. The "Interactive" downloading market allowed them to achieve this flexibly and at a much, much lower cost, leaving the CD market slowly dying and the high cost base of the traditional Music Industry creating a huge problem for its leaders.

Innovation through Interactive business models has continued and now embraces two further phases that develop the new Business Model still further. In the first phase, artists like Radiohead have realized that they can use the Web to promote themselves and sell directly to their fans, and that they can afford to charge very little for their music whilst still making more money than they would have under the old contracts with music industry leaders. In the second phase, social networks are now appearing, bringing together those interested in a particular genre and making it easier for new artists to find potential buyers or for the buyers to request artists to record songs of their choice.

Case Study

Radiohead

In 2007, Radiohead a well known and popular group, released their new album, 'In Rainbows', via the Web, inviting their fans to pay what they thought it was worth. Most decided on a sum that was higher than Radiohead would have got as their percentage share of a CD sale.

At the same time, Radiohead offered other high value items, such as a boxed gift set, on the same website, at more conventional sums of money, and reaped the benefit of more revenues by increasing traffic to the site through their 'interactive' 'pay what it's worth' activities.

Other benefits, including more accessibility to their music, ensured that non-fans tried out Radiohead tracks, thus increasing their fan, or customer, base.

5 High Level Business Architecture

A Business Architecture is used to define the activities of a Business Domain in relationship to its goals by describing functions, processes, etc. Normally, the overall stability of the Business Model would ensure that Business Architecture would evolve over time and not be subjected to large amounts of change. Change would be more likely to occur in the overall organizational model in terms of its relationship to other Business Domains than in the activities of an individual Business Domain. However, switching to the Interactive Business Model does require a substantial change. This section, therefore, lays out a Business Architecture at the conceptual level, with a view to relate this to the use of Technology in delivering business solutions.

A number of terms are in use to describe the behavior of enterprises in terms of their change-embracing operational characteristics. Two popular terms that are linked and which are important to Business Model Architecture, but which are, perhaps, not generally understood in this context, are described as follows:

Enterprise 2.0: A definition credited to Professor Andrew MacAfee of Harvard Business School, who first used it in 2006, directly after Tim O'Reilly first fully defined Web 2.0 (see next section for a briefing on Web 2.0), to describe an enterprise with a business model and architecture based on these capabilities. This led to the development of the entire school of thought around the need for Business Model Innovation driven by Technology Innovation. With time and practical experience gained by early adopters, this has led to the Interactive business model definition of using Web 2.0 technologies to create collaboration during the product creation, sales and sourcing phases, with a view to profiting in specialized markets created by and accessed through Web 2.0 communities.

By contrast, the term **Agile Enterprise** is (or was) linked to the use of Agile Software Development methods in support of a constantly changing and evolving organization that gains its competitiveness through its ability to change. The Business Model is, therefore, usually Reactive, though some Agile Enterprises are Proactive, especially in the sense of creating disruptive change, but Web 2.0 technologies are not necessarily required to be used, nor is the Interactive Business model. The key Business Architecture definition and models are usually credited to Ori Brafman and Rod Beckstrom who authored the book *"The Starfish and the Spider,"* in which they describe a decentralized organization showing the characteristics below. Many thinkers now believe that these same characteristics can be applied to an Enterprise 2.0 Interactive Business Model, hence the overlap in the use of terminology and the reason for listing them here:

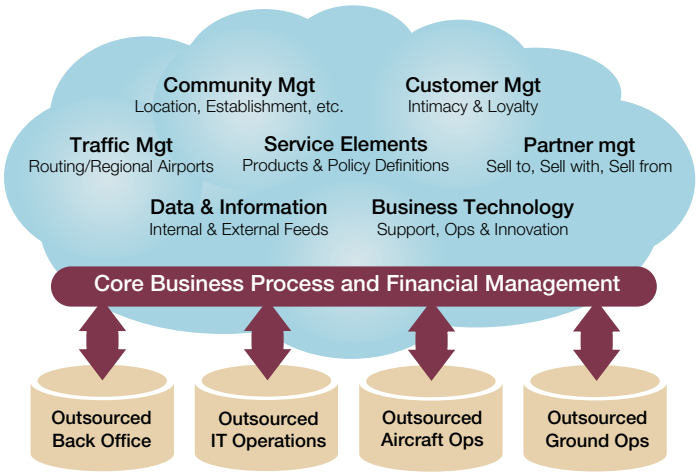
- Projects are generated everywhere within the organization and sometimes from outside the organization
- No one is in direct hierarchal control
- Removal of any one unit does not affect the overall organization
- Participants function autonomously, providing scalability
- Roles are amorphous and ever-changing
- Knowledge and power are distributed, with intelligence spread evenly
- Working groups communicate directly and not hierarchically
- Key decisions are made collaboratively, on the spot, and on the fly.

Whilst many of these characteristics are clearly related to the capabilities that using Web 2.0 technology can provide to people working in this manner, there are two specific capabilities provided by Web 2.0 that are directly related to Business Architecture in terms of activities, functions, roles, etc. The first is "Personalization," referring directly to the role, activities and functionality of an individual in respect of the overall business model, and the second is "Differentiation," referring to a range of specific activities that are used to address different markets through the "Long Tail" effect. Obviously, the desire is to locate a specific community of people externally that can be addressed by a differentiated offering.

In actual fact, success is not found in achieving this once, but to find and address multiple communities with a differentiated offering, and to support these offerings by using common processes that reflect the core competencies of the Enterprise. This maximizes the market share and revenue, whilst applying the leverage of optimized use of resources.

Diagrammatically, we can represent this by starting with a focus on a differentiated offering. If we return to the example of a low-cost airline aiming to sell to a community associated with a football team. The market is therefore concerned with offering travel options to the fan club for "away" matches played by their home team.

The Virtual Low Cost Airline Business Architecture Model



The differentiated offering must deal with all aspects of the choices that the airline wants to offer in this particular market and community. This covers flight schedules through to pricing formulae, with a series of rules for defining circumstances for generating the price offers for individual flights. At the "Personalized" level, access to those fans who are potential customers is made by using a "mashup", which allows the low-cost airline to embed its offering within the fan club's process for providing tickets, travel, and accommodation for away matches.

There may be similar versions of this differentiated offer embedded in any sports club that has its home playing field near one of the airports served by this particular low-cost airline. It is also possible that the airline will operate this particular differentiated offering across many sports clubs as a focused,

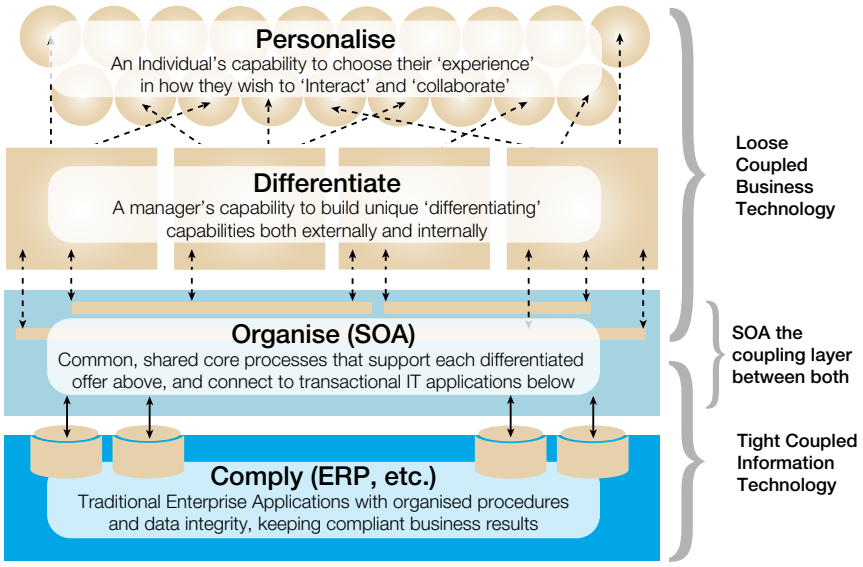
specialty service that it has pioneered and enriched for sports club fans through its personalization capability. This would enable it to resell seats on other airlines, thus allowing it to add "smart services" to the existing product of its own airline seats.

The airline should try to access as many of these differentiated markets as possible in order to maximize its revenues, but will require a suitable Business Architecture to define its organization, functions, roles and responsibilities structure, in order to create the ability to maximize the revenue possibilities from each of these markets. The requirement is to differentiate where it creates value, meaning increased revenues, margins, or market share, and to make "common" use of those aspects where doing things differently adds no benefit but does increase costs.

All of these differentiated markets must be connected to the common core processes used, to manage the administration of the functions such as the actual seat bookings, boarding pass administration, charging and collecting money from sales, etc. These core processes may belong to the airline or to the industry if it must log the booking on behalf of another airline for which it has been acting as a sales agent. The processes may be operated by the airline or they may be outsourced. The final requirement is to link the processes that form a direct part of the financial and commercial compliance functions of the airline to its core back-office systems that manage the "books."

The four business domains are commonly represented as a layered model, particularly by the major technology vendors, who usually describe the result as a Governance model. In using this term, their intent is to define, within the business architecture, the activities and responsibilities of various aspects of the enterprise, and not to link to the term as used in a "compliance" sense. The most important aspect of the so-called "four layer" model is the ability to directly transfer the business activities in each layer to the available technology products that can support the functions and the increasing use of open or publicly defined interfaces between the layers. In producing these "product" maps, the basic four layers defining the Business Architecture and domains may be extended into a Technology Architecture and Product Map, adding capabilities such as a database.

Business and Technology Architecture Governance Model

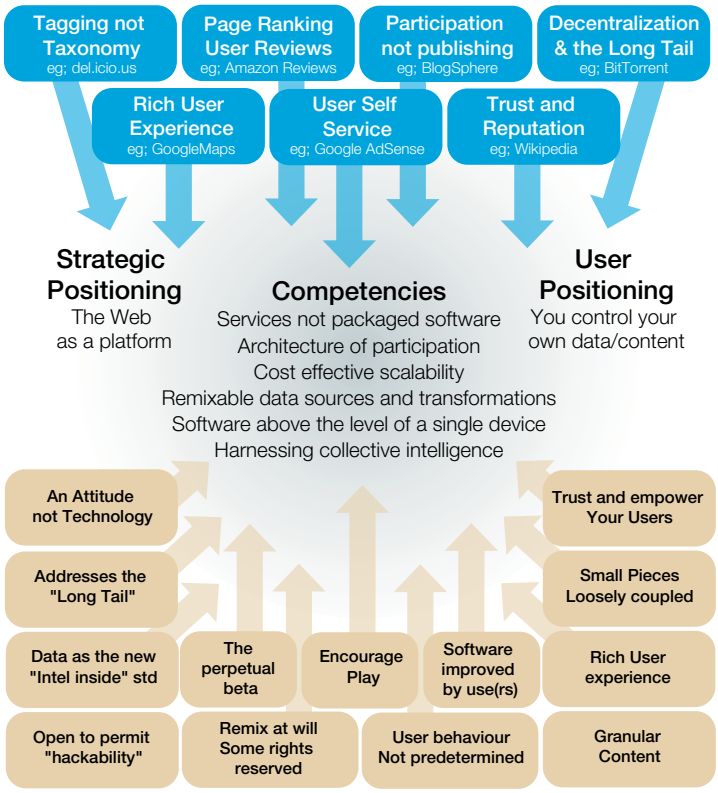


6 A Briefing on Web 2.0

The original concept of Tim Berners-Lee for the World Wide Web was based on improving accessibility of content through the use of relatively simple, standardized rules. Amongst its key principles was active participation, sometimes referred to as the "read and write" web, to indicate that ordinary users could both contribute as well as consume. The simplicity of use, the direct involvement of people, and above all, the open nature of the rules in terms of managing presentation, formats, etc., encouraged experimentation for other uses and a shift towards people-orientation in addition to the original content focus.

This had become noticeable by 2004, so much so, that a discussion on the principles of the new Web between Tim O'Reilly—a well-known industry activist, exhibition organizer, publisher of technology books, etc.—and another well-known industry figure, Dale Dougherty of MediaLive International, led to the production of a list of characteristics that identified whether a site or a capability was part of the original content-orientated Web, which they called Web 1.0, or was part of this new and different emerging set of capabilities, which they labeled Web 2.0. From this, the pair decided to launch the first Web 2.0 conference. This conference of enthusiasts produced the first attempt to define all of the characteristics in a single diagrammatic form, known as the Web 2.0 Meme Map.

O'Reilly's Original Web 2.0 Meme Map



Over the following two years to 2006, the Web 2.0 event became, and still is to this day, a huge influence on the development of the core principles that underlie the capabilities used by a wide variety of people, technology providers and enterprises. Web 2.0 has key principles, the observance of which is a fundamental part of the model allowing the Web principles of participation by all, and at every level, to be maintained. The principles are deliberately "open-ended" and are not meant to be confining rules. Today, these principles apply as much to the products of the largest technology vendors as to the Business Models and Architectures of Interactive enterprises. It is this combination of both Business and Technology in the same models that caused Forrester to coin the term "Business Technology," or BTech, in 2006, after Harvard defined the concept of Enterprise 2.0.

The original seven principles also included a statement as to the core characteristics of a Web 2.0 enterprise, and were:

1. The Web as a Platform
2. Harnessing Collective Intelligence
3. Data as the next "Intel inside"
4. End of the Software release cycle
5. Lightweight programming models
6. Software above the level of a single device
7. Rich User Experience

With the core competencies for a Web 2.0 company defined as:

- Services, not packaged software, with cost-effective scalability
- Control over unique, hard-to-recreate data sources that get richer as more people use them
- Trusting users as co-developers
- Harnessing collective intelligence
- Leveraging the "Long Tail" through customer self-service
- Software above the level of a single device
- Lightweight user interfaces, development models AND business models

Later, a modified set, which included some clarification of the value or significance to the business of each, was published by O'Reilly, at least partially in response to the Enterprise 2.0 definitions. This version (shown below) tends to be the one referred to today, and it contains the significant addition of the "Long Tail" as its opening value statement.

1. **The Long Tail**
   Small sites make up the bulk of the Internet's content; narrow niches make up the bulk of the Internet's possible applications. Therefore: Leverage customer-self service and algorithmic data management to reach out to the entire Web, to the edges and not just the center, to the long tail and not just the head.
2. **Data is the Next "Intel Inside"**
   Applications are increasingly data-driven. Therefore: For competitive advantage, seek to own a unique, hard-to-recreate source of data.
3. **Users Add Value**
   The key to competitive advantage in Internet applications is the extent to which users add their own data to that which you provide. Therefore: Don't restrict your "architecture of participation" to software development. Involve your users both implicitly and explicitly in adding value to your application.

4. **Network Effects by Default**
   Only a small percentage of users will go through the trouble of adding value to your application. Therefore: Set inclusive defaults for aggregating user data as a side-effect of their use of the application.
5. **Some Rights Reserved.**
   Intellectual property protection limits reuse and prevents experimentation. Therefore: When benefits come from collective adoption, not private restriction, make sure that barriers to adoption are low. Follow existing standards, and use licenses with as few restrictions as possible. Design for "hackability" and "remixability."
6. **The Perpetual Beta**
   When devices and programs are connected to the Internet, applications are no longer software artifacts, they are ongoing services. Therefore: Don't package up new features into monolithic releases, but instead add them on a regular basis as part of the normal user experience. Engage your users as real-time testers, and instrument the service so that you know how people use the new features.
7. **Cooperate, Don't Control**
   Web 2.0 applications are built of a network of cooperating data services. Therefore: Offer web services interfaces and content syndication, and reuse the data services of others. Support lightweight programming models that allow for loosely-coupled systems.
8. **Software above the Level of a Single Device**
   The PC is no longer the only access device for Internet applications, and applications that are limited to a single device are less valuable than those that are connected. Therefore: Design your application from the get-go to integrate services across handheld devices, PCs, and Internet servers.

Though these principles are important, especially to collective understanding of the medium, they are by no means clear in terms of understanding how they contribute to the creation of business value. This is a key point that must be practically addressed to be able to deliver a workable business solution, and is the subject of the next section: "A TechnoVision."

7 A TechnoVision

The obvious conclusion from the preceding sections is that if technology has led to business change and then to the combination of business and technology to create success in new markets, it is necessary to develop a vision of what technology can do for "our" business, hence the term, "TechnoVision."

Techno Vision

TechnoVision takes the basic "vanilla" technology building blocks of Web 2.0 and other emerging technologies; extends and redefines each in greater detail; considers which individual technologies will apply to each of the building blocks; creates seven technology clusters, each of which possesses the capability to drive business change; and provides a detailed capability to drive business. TechnoVision represents a highly detailed and structured approach towards actually achieving a Business Model Transformation and is not part of the overview of this paper. However, the seven TechnoVision clusters are the important link to the development of technology architecture covered in a following section, and are hence reproduced here for the same reason:

- The **You Experience**: The capabilities that drastically improve the way individuals are able to use information systems through "personalize" to create an individually satisfying experience. The technology capabilities of the cluster include: Rich Internet Applications (RIAs)—highly interactive media-rich applications that are executed through a simple Internet browser; role-based user portals that morph their content to the specific, context-dependent

needs of an individual user; so-called "iPodification"—the use of simple, yet advanced devices that combine multiple functions; and "mashup applications" and "Widgets," solutions that are quickly assembled from multiple services, potentially from many different sources inside and outside the organization.

Business drivers range from the external ability to create compelling, differentiated customer experiences that will lead customers to choose their suppliers on the basis of the ease and satisfaction of their experience, through to internal requirements to provide users with the ability to understand complicated situations in the manner that suits their needs best.

- The shift **From Transaction to Interaction:** Perhaps the single biggest change in the capabilities provided by Technology is the transfer of the focus from Information Technology (IT) (recording business transactions after they have occurred), to Business Technology, i.e. BTech (helping enterprises to "interact" with their customers, markets, partners, and suppliers in a manner that changes fixed, predefined business transactions into ongoing relationships). The technologies of this cluster are broadly the tools for collaboration, but that also covers new forms of collaborative behavior through the social collaboration environments of Web 2.0 that enable new, open economic models ("Wikinomics"), and leverage the power of large groups of collaborating individuals ("crowdsourcing"). This leads, among other things, to new ways for autonomous knowledge workers to work on different activities from any location, possibly even for multiple organizations, at the same time.

  Business drivers that relate to this area typically involve how to create and deliver environments for "pull" engagements with "Long Tail" market communities, and all the necessary supporting capabilities such as alliance strategies, collaborative development, knowledge management and client/consumer intimacy.

- **Process-on-the-Fly:** A new wave of service-oriented solutions enables business analysts to quickly simulate, describe, model, execute and manage business processes. This provides an unprecedented capability to change and improve processes "on-the-fly," responding to business-critical events the moment they occur. This flexibility increases even more with the availability of business rules systems that help to isolate the policies of the organization from the supporting information systems. In addition, "composite application" platforms provide additional flexibility through their ability to quickly compose supporting applications from fine-grained, loosely coupled services.

  The Technologies of Middleware, ranging from Service-Oriented Architecture (SOA) to Business Process Management (BPM), form the basis for this cluster, but are complemented by methods that change and extend what and how services can be orchestrated into processes. Some are oriented towards technology use, but others are simple user-driven tools that allow users and business managers to make the changes they need to business processes with automatic implementation underneath. This cluster is at the heart of combining individual Business and Technology elements in the very manner of Business Technology.

  The business drivers are the capability to be able to "manage" extremely frequent change, and therefore, at a strategic level, allow for acquisitions and disposals of business units through to entry and exit of different markets with different partners. Tactically, "Process on the Fly" provides the ability to support large numbers of highly differentiated business offerings connected to a number of relatively standardized core procedures, i.e. the ability to *"differentiate where it creates value, and to make common where it reduces cost"* (as previously defined).

- **Thriving on Data:** Intelligence has always been the cornerstone of information systems, supporting many major strategic, tactical and operational drivers of the business. However, through the emergence of open standards and Service-Oriented Architecture, structured and unstructured data can now be extracted from a wider range of sources, often in real time and increasingly from outside the organizational perimeter. The value of this avalanche of data is amplified as it is embedded in the activities of every member of the organization, potentially involving many different applications, but always within the context of supporting the decisions required. Examples of technologies in this cluster include real-time integrated business intelligence, searching the semantic Web ("Googlification") and "mastered" data management.

  No solution area affects more business drivers than "Thriving on Data." The ability to answer the age old question of "I wish I knew" at the right time and in the right context, changes the approach to, and optimization of, many operational situations. These drivers include regulatory compliance, corporate performance management, risk management, customer intimacy, knowledge management, decision-making, portfolio management, control and efficiency, and most of all, the support of the "pull-based" "Long Tail" business model, where potential customers Interact with the business for both parties to decide on an acceptable "deal".

- **Sector-as-a-Service:** The ability to redefine an organization as a series of "services" externally, to make its various products easier to position and combine in order to suit a customer's requirements, and/or for the customer to interact with in order to build their own requirement. These services are value-creating by providing the ability to make differentiated go-to-market offerings. Internally, different services can be used for areas of an enterprise's Business Architecture that are non-differentiating. This approach allows for simplification in operation by reducing the need for complex, highly-customized software applications, and substituting the use of standardized utility style services, which can be supplied by external partners through Software-as-a-Service (SaaS) if desired. The cluster technology underpinning this shift is mostly associated with Service-Oriented Architecture (SOA) in the form of tools, Middleware Frameworks, etc.

  The dual approach to using services makes for two different sets of business drivers: On one side lies the opportunity to rethink the go-to-market approach to offer a rich variety of products and services that can be re-combined to create interactive offerings. On the other is the capability for reducing complexity to gain both cost benefits and efficiency, as well as managing large-scale changes in the form of mergers and de-mergers, etc.

- **Invisible Infostructure:** In support of the dynamic, agile and interactive business model, the infrastructure must be able to accommodate frequent, if not continuous, change, and this requires it to function in a different manner. It's not just the automation of existing functions to make the supporting capabilities "Invisible," but rather it's the addition of many new functions, hence the use of the term "Infostructure." The same Invisible Infrastructure will have to extend to support a wider variety of devices, and most importantly of all, to function between enterprises as the supporting layer for their abilities when carrying out many different forms of business.

  The Infostructure includes user devices that consume the services identified elsewhere, which make the technology complexity totally invisible, such as in the case of iPods, smart phones, and Gaming Consoles, or Business Platforms such as Google Earth and Maps that can be simply adopted into a combination of services to provide unique additional value, or even Technology

Platforms, often described as Utility or Grid Computing. The total environment is increasingly being referred to within the Technology Industry as Cloud Computing, meaning that the complexities of the Invisible Infostructure do not have to be understood in order to be used, and hence can be represented by the simplicity of a cloud in a Business or Technology architecture.

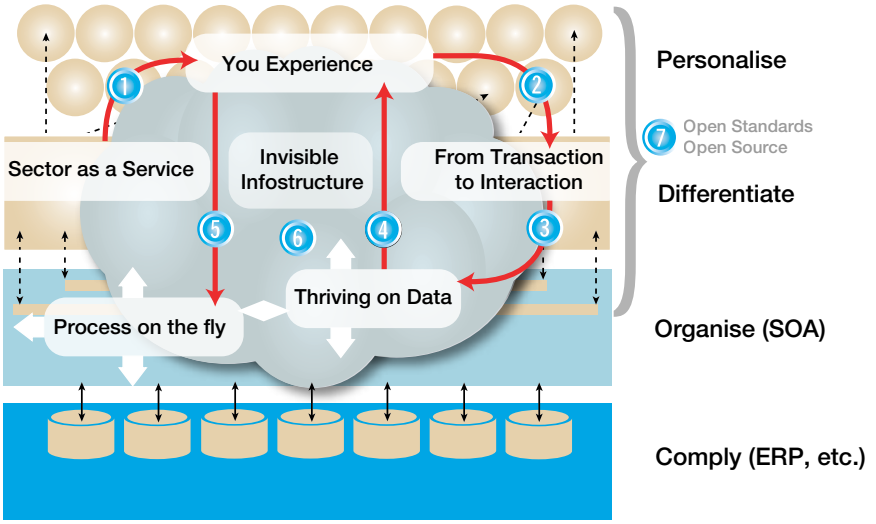
Technologies are wide-ranging from the basic organizational structure of servers using Virtualization and Grids, through to high level services around storage and security. At the same time, Business Drivers are generally focused on the implications of being able to provision and support the business in a manner both to support the variable, constantly-changing nature of new business models, and to reduce the cost of providing basic Technology services within an enterprise.

- **Open Standards, Open Source and Open Services:** A cluster of enablers for the Business and Technology changes induced by the other six clusters. Many business breakthroughs from the new uses of technology are catalyzed by the increased availability of Open Standards, both as enablers of a boundary-less information flow between organizations, as well as a shared vocabulary and way of working that fuels global, distributed-delivery scenarios. These shared, often public, environments are not capable of being controlled in a manner that traditional applications require—i.e. through licensing terms based on numbers of users, servers, processors, etc. Therefore, Open Source software becomes a necessity. Taken together, Open Standards and Open Source allow the creation of Open Services: Standardized services that allow every individual, every enterprise, and indeed, at the technology layer, every capability to be accessed and used.

8 High-level Business Technology Architecture

In this final section, all the pieces come together. The example continues to be that of a low-cost airline, with an Interactive Enterprise 2.0 Business Model based on the use of Web 2.0 technologies (as used as an example previously). In the high level Business Technology Architecture, the TechnoVision clusters are applied to create the link between the business and technology elements. The description used there will focus purely on the external activities that allow the airline to attract and win more revenues from a wider market, and to position for "Long Tail" markets by combining the various elements described in each section of this white paper. For each of these individual activities, there will be corresponding internal activities.

TechnoVision Conceptual Technology Architecture



The starting point is the business driver of *"Sector-as-a-Service"*—i.e. the challenge of breaking the various activities of the airline into specific services that correspond to the products that can be sold or utilized by its customers. The airline has three key services: destination, flight date and time, and price, all of which can be combined in various ways to offer flexibility to a prospective customer. Additionally, the airline can also promote other services ranging from automation of the check-in process online, boarding pass printing and seat selection, through to value-added services from business partners such as flight insurance, car hire, etc. Additionally, the airline can act as supplier to other partners of its services by embedding them into its own services, such as the example of travel services to a football club in connection with away matches.

All of these services will be consumed by a prospective customer through the *"You Experience"* of either the airline's own website or those of its business partners. The presentation of the "products" for ease of understanding and interaction, or even to enable their embedment into other websites, are a key

part of attracting prospective customers and actually making the sale. Think of it as the "packaging" of a conventional store, which can either attract attention or be so nondescript so as to totally fail to attract, combined with the instructions for actually using the product. The easier it is to ensure that an enterprise's *"You Experience"* can be linked to, promoted by, or embedded into other Web 2.0 environments, the further ranging will be the exposure to the business offerings. The more the integrity of the You Experience that can be maintained when incorporated, the better will be the differentiation of the buying experience from competitors delivered. An example might be a hotel operator that embeds the low cost airline serving the local regional airport into their web pages, to make it easier for their prospective customers to decide to come to them.

Originally, airlines had fixed prices for fixed destinations with perhaps a few special promotions by the Marketing Department—i.e. a traditional, fixed business model centered around "pushing" supplies of seats or airline tickets to the market. The Web merely offered a further channel in addition to the existing channels comprising retail stores and travel agents, to make a booking in a way that would allow the Information Technology to record the resulting Transaction. The objective of the low-cost airline using the pull model to find new markets is to get the prospective customer to Interact, in order to extend the possibilities of a sale by developing a personalized and optimized combination of the products and supporting services; Hence, the need to refocus from *"Transactions to Interactions."*

However, to be able to do this requires the low cost airline to *"Thrive on Data"*—not just their own traditional sources of internal data from transactions such as how many seats have been sold on a given flight, but to combine this with a whole range of external data sources to judge the possible demand, competition, etc. To thrive on data is to be able to have the information from the marketplace that will enable the highest price for each seat to commensurate with the utilization of the maximum number of seats on any given flight. As an example, the pricing to be offered to fans desperate to travel to support their favorite football team at an away match is different from the fare offered to a casual traveler trying to decide if the price is appealing enough to visit a particular city for the weekend. Alternatively, if the city has a particular event or festival on a particular weekend, then the demand will be higher, which means pricing can be higher too. To exploit markets and events into higher revenues and margins means capturing and using sources of data way beyond those of conventional Business Intelligence (BI).

The goal is, of course, to make a sale; so the final stage in the process is to evoke or connect to a *"Process on the Fly"* that can map the chosen assembly of options into a recognizable process, in order to check the facts or advise on the outcome, and hopefully to connect to the traditional Information Technology (IT) environment via the Service-Oriented Architecture layer and make the transaction actually book the seat.

This entire sequence of events, and in fact the whole Business Technology environment, relies upon *"Invisible Infostructure"* as the supporting cluster of services, uses "Open Standards" to allow every individual, and every system to work together, and is likely to use Open Source for the same reasons.

At every stage, there is a range of complex options to consider when assessing the maximum impact and benefit to the business. These are important choices far beyond technology, and are focused on the realm of using technology to optimize the business model. The Capgemini TechnoVision approach provides a comprehensive methodology to ensure the integrity of the final choices when implemented.

9 Appendixes

Appendix A: Details of Examples Cited in the Synopsis

The Airline Industry: Since 2000, passenger revenue in the airline industry has increased by 40% to reach $358 billion at the end of 2006, while the number of passengers has risen by over a quarter to 2.1 billion over the same period[1]. During this time, low-cost airlines in Europe have increased their share of the market tenfold from 2% to almost 20%.[2] and the seven year period ended with the transformation of the entire industry to 'paperless' ticketing and travel in recognition of the change to an 'interactive' market.

Amazon: Starting as a retailer of Books and CDs, Amazon now covers more than 60 different types of categories[3], as well as offering a full partnering program to act as a retailing services provider to other enterprises. Year on year revenue growth in 2007 was 38.5%.[4]

Threadless: An originator of the community 'pull' market through using an 'interactive' business model now has more than 700,000 members of its community, and achieved sales in excess of $18 million in 2006. Revenues in 2007 are believed to have more than doubled from 2006 levels.[5] Most importantly, it is able to sustain higher than average pricing for its T-shirts in a commodity market, against which it has lower than average costs.

Toyota Scion: An online brand, built around regional communities' social events, that encourages the use of cars and the idea that a car should be a unique expression of personal profile. It combines manufacture of a standard product with local partners to customise and gained close to 1% of the overall North American car market in the five years since it was launched in 2003.[6] Given that Toyota market share in 2007 rose by 2.9% to 16% Scion alone was responsible for one third of that growth. Most particularly, it enabled Toyota to access the market of younger adults that was previously relatively inaccessible to their main brand and business model.

Westpac: A leading Australian bank set out to re-invent their ways of working christening their intent as to create Westpac 2.0 with the goal of reinventing their relationship and services with a new generation of potential customers. In early 2008 they had succeeded in creating community interactions through listing in Wikipedia, and WestpacUtube, as well as conventional blogs, etc. and internally had 'flattened and rewired' the enterprise to work differently. Westpac's nascent network of Web 2.0 sites is expanding not only across the bank. It is increasingly reaching into the company's many supplier relationships as well. Westpac's CIO has stated that Westpac is keen to increase its early work with wikis and blogs to tighten collaboration both inside and outside the organization:

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[1] Source: IATA, 2007

[2] Source: EUROCONTROL, Low-Cost Carrier Market Update, June 2007

[3] Source: www.amazon.com as of 21 August 2008 http://www.amazon.com/gp/site-directory/ref=_gw_

[4] Source: Google Finance, 2008 - http://finance.google.com/finance?q=NASDAQ%3AAMZN

[5] Source: Inc. Magazine, June 2008 - http://www.inc.com/magazine/20080601/the-customer-is-the-company_Printer_Friendly.html

[6] Source: PR Newswire (U.S.), 3 January 2008; Credit Suisse, 4 January 2008

"It's very difficult in an organisation of 26,000 people – and also an extended one when you think about those companies we work with – to get access to the best insights, and those insights are something we want to know about…We can be more effective in terms of really leveraging the collective knowledge that 26,000 people and an extended network of many more people can bring."[7]

Phillips: Maarten de Vries, Corporate CIO, Royal Philips Electronics commented: "The message of Capgemini's TechnoVision appeals to Philips. More specifically, we appreciate the core-message of 'freedom' that is embedded in this vision: freeing up from constraints in the foundation of the IT landscape and freedom to seize new opportunities in support of the business goals. This vision will help us simplifying our enterprise application landscape and increasing the business value of IT within Philips."

Appendix B: Creating an "Interactive" Market

- Get a **Community**
  - By creating it, hosting an existing one, or joining an established one
  - Make sure that the community feels they are in charge, and not you
  - Ensure that they have the tools, capabilities, etc., that allow them to create
  - Make sure that there are real feelings of self-benefit from belonging
- Have a strong **Proposition**
  - Make sure that it's simple to grasp, i.e. explain it in less than three sentences
  - Ensure that it creates a tangible "difference" to members' lives
  - Balance member participation with yours to ensure interaction and interest
  - Make it worthwhile to visit frequently to "catch the buzz"
- Make sure it grows **Virally**
  - Find ways to ensure it is easy for members to invite or involve others
  - Ensure that all the tools are present: RSS, IMs, SMS, Widgets, etc.
  - Find ways to import address books and memberships from other communities
  - Ensure that there is a "networking" effect that naturally encourages growth
- Make it a continuous **Beta**
  - Create excitement through dynamic change and feature additions
  - Encourage "open API-based" development from others
  - Use feedback and trials to ensure that members are getting what they want
  - Experiment with ways to make the site a cross roads to other communities
- Consider **Revenue** Opportunities
  - Can external revenue through advertising be added naturally?
  - Would it be possible to add other products or services?
  - Could the site become a platform for a series of communities?
  - Is there a multiple revenue model from minor repositioning?
- Be **Open** and harness other content
  - Allow, support and enable as much content as possible to come in
  - Do not try to close your community as it will frustrate members
  - Even provide (indirectly) competitive information to keep members interested
  - Consider how to place content and use other sites such as YouTube

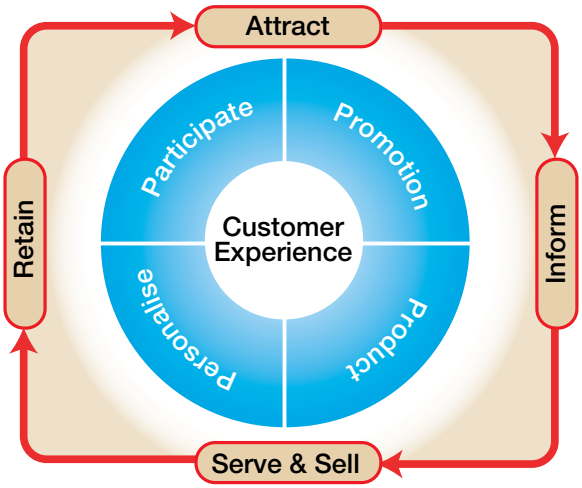
[7] Source: Australian IT, March 12, 2007, http://www.australianit.news.com.au/story/0,24897,21334522-15302,00.html

- Be the **Authority** in your space
  - Use the above to make sure your community is "unmissable"
  - Be the one place everyone knows everything is at
  - Make sure that all routes point to your community and propositions
  - Think big even though your are aiming at a "Long Tail" niche

- Plan your **Monetization** model
  - The goal is to create a unique and comprehensive position
  - The combination of elements cannot be created easily by others
  - It's worth real money to get this and it's not available elsewhere
  - Figure out how the more important members who belong to the community can create even more value

- **Above all, remember that it has got to be Fun or Valuable to members**

The Virtuous 'Interactive' Cycle



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