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SPECS : a new approach to strategic planning for e-commerce systems

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Abstract

This mini track position paper proposes a new paradigm for strategic planning for e-commerce systems (**SPECS**) and outlines the many issues that such an approach has to encompass. These include concepts such as virtual and electronic markets and the lifecycle of e-markets; supply chain management, value chains and exploiting virtual value chains; relationships within the market such as intermediaries and cybermediaries and value-based electronic market structures. All of these are pulled together in the **SPECS** framework and the problems of planning for and managing such e-commerce strategies reviewed.

Strategic Planning for e-commerce Systems (SPECS)

Why should strategic planning for e-commerce systems (**SPECS**) be different from strategic planning for IS? One of the major reasons is that **SPECS** involves collaborations among multiple organisations with several complex economic, strategic, social and conflict management issues as well as major organisational and technological factors. This new business paradigm is one where core business processes may need to be rethought and redesigned, new organisational forms and inter-organisational forms may need to be developed and where the emphasis will be on collaboration rather than competition within the virtual market. Driven by such phenomena as the World Wide Web, mass customisation, compressed product life cycles, new distribution channels and new forms of integrated organisations, the most fundamental elements of doing business are changing and a totally new business environment is emerging. (El Sawy et al, 1999; Ticoll et al, 1998; Wigand and Benjamin, 1998; Jansen et al, 1999; Rayport and Sviokola, 1995; Burn and Barnett, 2000).

Planning and managing such systems requires an integrated multi-dimensional approach across the e-business (Kumar and Crook, 1999). As a first step the following questions need answering:

- What business should we be in?
- What are our current core competencies?

- What are the opportunities for new products or service lines?
- What are the opportunities for new business channels?
- What do consumers ideally want to buy?
- What is the most effective value proposition in the short, medium and long run?
- What roles should we play—make, sell or service—and who are my customers?
- Who are our competitors, and how do we need to be positioned?
- What is our operating model?
- With whom should we partner/network?

The answers, if they are guided by a deep understanding of the economic implications and opportunity of e-business, will produce a very different picture of the company from the one in place today. This needs to be incorporated into a compelling, enterprise-wide vision and translated into an effective strategy for e-commerce development. For many companies, achieving that vision will require building greater expertise in the strategic and operational application of technology - which, for better or for worse, is driving the rapid evolution of e-business but that technology focus must be tempered by applying cross-disciplinary, cross-functional and cross-industry perspectives and expertise. This is essential in an e-economy where industry boundaries will be shaped by customer needs rather than by core competencies.

This paper suggests that a comprehensive approach to **SPECS** will involve:

- E-Market Analysis
- E-Chain Analysis
- E-Alliance Analysis

E-Market Analysis.

One approach to the analysis of e-markets is to view these as an ecosystem where e-businesses co-evolve. The virtual market ecosystem is seen as “an economic community supported by a foundation of interacting organisations and individuals - Over time they coevolve their capabilities and roles, and tend to align themselves with the direction set by one or more central companies”

(Moore, 1997, p. 26). The ecosystems evolve through four distinct stages: Birth, Expansion, Authority, Death And at each of these stages the ecosystem faces different leadership, cooperative and competitive challenges.

This view is supported by Eisenhardt and Galunic (2000) who point out that the new roles of collaboration in e-business are actually counterintuitive and that collaboration does not naturally lead to synergy. Where synergies are achieved the managers have mastered the corporate strategic process of coevolving. These managers routinely change the web of collaborative links - everything from information exchanges to shared assets to multibusiness strategies -among businesses. The result is a shifting web of relationships that exploits fresh opportunities for synergies and drops deteriorating ones. An alternative view is to suggest an evolutionary stage growth of different models of e-markets.

Models of E-Markets

Ticoll et al (1998) in their examination of e-business communities identify four different models of e-markets. They suggest that such markets differentiate along two primary dimensions: economic control and value integration.

The open market model is basically a business to consumer model without any single player in overall control although different players and market alliances can drive events at different times. The aggregation model normally has one business in control positioning itself between suppliers and producers. Value chains have a similarly hierarchical model but maximise value integration through operational effectiveness and alliances retain that high value integration but rely on shared visions, standards and business practices to provide a full solution environment without any single company exercising overall control. Jansen et al (1999) suggest that another classification can relate the control variable to the emphasis on efficiency or flexibility and innovation and that this will imply a stable or dynamic market. In many virtual market environments this can be seen as a staged growth evolution of e-business maturity. Each of these stages of maturity demands different approaches to strategy and different approaches to process management.

Strategies for Markets

Berryman et al (1998) suggest there are three types of marketplace: those controlled by sellers, those controlled by buyers, and those controlled by neutral third parties. Marketplaces controlled by sellers are usually set up by a single vendor seeking many buyers. Its aim is to create or retain value and market power in any transaction. Buyer-controlled marketplaces are set up by or for one or more

buyers with the aim of shifting power and value in the marketplace to the buyer's side. Many involve an intermediary, but some particularly strong buyers have developed marketplaces for themselves.

Companies wanting to evaluate which model suits them best should answer the following four questions to help them determine an appropriate strategy.

- Is an electronic market for our product developing quickly?
- Would a neutral intermediary be beneficial?
- Do we have substantial market share or buying power?
- Are there transaction savings or benefits to be realized?

For buyers, the strategic imperative is clear. They have little to lose and much to gain. and should therefore organize a buyer-controlled marketplace as quickly as possible. The dynamics of electronic marketplaces also create clear opportunities for third-party intermediaries, which can create value by virtue of their neutrality. Sellers are the most vulnerable participants, because they will increasingly have to compete with other vendors in a transparent environment. The dynamics and rapid growth of electronic marketplaces are forcing businesses to choose their strategies now. Electronic business-to-business commerce is not simply a question of automating existing channels and processes. It is a whole new way of doing business. Aligning these approaches with the e-business model and stage of maturity of the virtual market requires the e-business to explore its supply chain management and to exploit its business value chain beyond the enterprise level to include interorganisational relationships.

E-Chain Analysis

Traditional supply chains and trading partner relationships are exploding into intricate and dynamic virtual networks of trading partners and service providers. The emphasis in these relationships is to derive significant value through increased revenues and decreased costs - achieving this in any organisation directly depends on the performance of all the others in the network and their willingness and ability to coordinate (Swaminathan et al, 1998). The question facing organisations today is not if they should join these new electronic networks, but how.

Traditionally, suppliers reengineered only their end of the supply chain by reducing obsolete inventory and cutting down cost and time of goods to market. However, a much more powerful concept lies in the Demand Chain where for example, a retailer's demand chain would consist of assortment planning (deciding what to sell) inventory management (deciding the quantity of supplies needed) and the actual purchase. Together with SCM we have the

Demand-Supply Chain and these are linked and managed in two places - the Order Penetration Point and the Value Offering Point (Holmstrom et al, 2000).

The order penetration point is the place in the supply chain where the supplier allocates the goods ordered by the customer. Goods might be produced after orders come in (make to order) or allocated from a warehouse once the orders have been received (package to order) or from distribution (ship to order). Each order penetration point has different costs and benefits for the supplier and its customer - for example rapid delivery (a benefit for the customer) depends on holding a large inventory (a cost for the supplier).

The value-offering point is where the supplier fulfills demand in the customer's demand chain. Moving this back in the demand chain largely benefits the customer, requiring more work from the supplier. There are three principal points. In the conventional buyer-seller relationship, the first point is the purchasing department, which accepts an "offer to purchasing" by choosing the supplier and deciding when goods are needed. An "offer to inventory management" moves the point further back in the demand chain: by carefully monitoring the customer's inventory levels, and an "offer to planning" moves the point back to merchandising or production. The further back so the greater work for suppliers and greater benefits for retailers. By coordinating changes in both the supply and demand chains a supplier can raise its customers' efficiency, as well as its own, i.e. simultaneous movements of the order penetration and value offering will be of mutual benefit to customer and supplier. Effectively, this can result in the development of a virtual value chain.

Virtual Value Chains

Mougyar (1998) suggests an e-business must then consider the following two questions:

- Can you increase the number of electronic connections, simplify interorganisational processes and at the same time discover ways to shrink, speed up, or virtualise the value chain
- What is likely to happen with your wholesalers, distributors, or retailers? Are they going to be disintermediated or are they likely to survive by transforming their businesses into new types of intermediaries operating in a neutral market (Berryman et al, 1998).

One obvious scenario is that the old value chain gets smaller and so more efficient as you bypass some of the steps in the supply chain (for example on-line delivery of soft products). In some cases as you disintermediate previous links in your supply chain new intermediaries will arise (for example you may change to selling through

a portal or vortal to reach a larger market). This dynamic reconstruction of intermediaries can also lead to dynamic allocation of intermediaries where the channels become invisible and so creating the virtual value chain (Rayport and Sviokola, 1995). The value chain of the firm does not exist in isolation but exists as part on an industry value system and the whole value system will consist of the value chains of suppliers, customers and competitors. This requires the organisation to develop effective e-alliances but also to identify the framework for market mediation and the management implications involved.

E-Alliances.

As organisations form and reform these e-alliances they also have to develop capabilities to cope with strategic, technical, cultural and operational change. Logistics, manufacturing and customer interfacing functions will become prime areas for outsourcing or incorporation into the virtual value chain and the ability to form and manage these is of critical importance. As the virtual value chain is formed facilitating direct exchange between the producer and consumer so we see the role of intermediaries being threatened (Wigand and Benjamin, 1995) but at the same time opportunities for new intermediaries arise.

Intermediaries.

In traditional consumer markets, intermediaries (such as a traditional retail store) provide a variety of explicit and implicit services for their customers. These include assistance in searching and evaluation, needs assessment and product matching, risk reduction and product distribution and delivery (Sarkar et al, 1995). They also benefit producers by creating and disseminating product information and creating product awareness, influencing customer purchasing, providing customer information, reducing exposure to risk and reducing costs of distribution through economies of scale. A large supermarket chain can provide market opportunities that a small producer would find impossible to generate on its own. The mediation role for customers and producers are normally juxtaposed and so part of the role of intermediaries is to balance this situation. While the truly virtual organisation with a virtual value chain may be able to fully disintermediate, the fact remains that most organisations will still rely on an intermediary to integrate producer and consumer services and present the consumer market with a large scale community front-end and one that can take advantages of economy of scale (Gallaughar, 1999). Interestingly, some of the biggest Internet businesses act as major intermediaries between other players. Amazon, CD-Now, Egghead.com and E*Trade can all be thought of as middle-men! Portals and vortals are both some form of electronic intermediary. This

suggests that rather than disintermediation becoming the norm, a new form of intermediary, cybermediaries, may evolve.

Cybermediaries.

Sarkar et al (1995) suggest the following list of cybermediaries:

- Gateways
- Directories
- Search Services
- Malls
- Publishers
- Virtual Resellers
- Web Site Evaluators
- Auditors
- Forums, Fan Clubs and User Groups
- Financial Intermediaries
- Spot Marker Makers and Barter Networks
- Intelligent Agents

These intermediaries will continue to be necessary where customers demand choice, require quality assurance and want additional social and entertainment value. Producers may be unable to impose producer-centric structures on the market and may also be threatened by the power of retaliation from the existing intermediaries. They may also choose to operate along known trust relationships in certain cultures and, indeed, using this system may be actually reducing the costs implied by legal contractual arrangements in place between producer and consumer. In many cases, electronic sites will continue to complement existing physical infrastructures but certainly restructuring of the processes is likely and the networked organisation needs to be fully aware of the impact of such changing relationships.

Managing e-strategy.

In the end, of course, strategy is only as good as its execution. New economic strategies will need to be translated into changes related not only to technology but also to processes and people. This will mean executing a complex, global change program on a large scale. Management of such systems is significantly more complex than managing IT within individual organisations. In order to put in place an e-strategy, the cost of communications and the cost of the technology needed must be justifiable to all parties, while any implementation must firstly deal with congruence with long range strategic planning. While this may already in place within an organisation, the formation of alliances or partnerships may serve to require a radical rethink in

terms of the revised landscape of opportunities and strengths.

Against this background, a shared approach to conflict management may need to be formalised, as existing implicit procedures may not suffice. It can be readily appreciated that the means of resolving a conflict in a company founded, owned and run by a single dynamic individual will be far distant from those employed by a publicly owned multinational with partially independent subsidiaries. Within a single language group or country, many business models may exist: with increased interest in forming transnational or global alliances, such issues assume high importance and call for considered investigation and resolution lest unstated different assumptions wreck collaboration unnecessarily.

Against this, organisational issues need to be plotted: partners may not have the same resources to throw at a project, they may have widely different views on the appropriate levels of responsibility within their forms and unstated beliefs in the business and social value of technology will affect implementation. Added on to these issues are those relating to the technology to be deployed within any e-business. Any discussion of standards, equipment, networks and the like will quickly throw up the fact that technology is not neutral.

Conclusions

The implications of e-markets, e-chains and e-alliances have been discussed in the context of strategies for e-commerce but also have to be related to the execution of e-commerce strategies. This implies the development and management of:

- Information-based business architecture strategy
- Integrated organisational systems
- Intelligent knowledge based decision systems

This will require an evolutionary approach to SPECS typically encompassing the stages of web site development shown in Table 1. It is essential to understand and incorporate the processes and business requirements of customers and suppliers and to build a foundation of trust. It is also essential to apply "outside-the-box" thinking to capture information from sources of innovation and create the opportunity to share information in non-competitive situations.

Stage	Web site
Presentation	Static web site - brochureware
Communication	Tailored to trading partner- View inventory/orders in hand
Interaction	Order placement or bids
Fulfillment	Links to back-end fulfillment systems
Collaboration	Dynamic interaction and virtual decision making

Table 1. Staged Strategies

The e-business that excels will be one that recognises and manages the complexities of SPECS.

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