



# Cooperative innovation: a value chain approach

Cooperative  
innovation

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## Abstract

**Purpose** – The purpose of this paper is to briefly review earlier contributions to partner/cooperative innovation with the aim of evaluating the application of the concept to the increasingly popular virtual/value chain business model.

**Design/methodology/approach** – A number of example cases of partner/cooperative innovation are examined and, although these are limited in number, it would appear that a classification of types of partner/cooperative innovation is possible.

**Findings** – Partner/cooperative innovation combines elements of process and product innovation management within a “network structure” to create a product-service response that neither partner could create using its own resources. They extend in both directions of the supply chain (upstream and down stream) and include supplier relationship management such as that demonstrated between Dell and its myriad of suppliers, and examples of customer relationship management such as the relationship that Caterpillar has built with its distributor/service network.

**Research limitations/implications** – The findings need further validation through empirical data analysis in appropriate industrial settings.

**Practical implications** – The paper includes a model that facilitates the evaluation of the “total efficacy” of partner/cooperative innovation alternatives. As such, the paper offers a viewpoint to be considered by management.

**Originality/value** – The paper describes partnership/cooperative innovation that combines elements of process innovation management and product innovation management within a network structure. Neither partner can independently create this network using its own resources to meet customer/market determined expectations for product and/or service performance at an economic (viable) cost. Third party involvement is typical.

**Keywords** Process management, Functional management, Virtual organizations, Economic cooperation, Value chain, Innovation

**Paper type** Conceptual paper

## Introduction

Changes in the business environment have resulted in consumer demand for increased product-service innovation, product variety, high quality products, support services, and immediacy for order satisfaction. The need for agile responses to meet these expectations has resulted in creating virtual structures that network with each other, using (or leveraging) the capital investments made by their partners and the distinctive capabilities and processes that the virtual business model makes available.

Magretta (2002) suggests, using the example of American Express in the nineteenth century, that:

... a successful business model represents a better way than the existing alternatives. It may offer more value to a discrete group of customers. Or it may completely replace the old way of doing things and become the standard for the next generation of entrepreneurs to beat.



Further:

... all new business models are variations on the generic value chain underlying all businesses. Broadly speaking, this chain has two parts. Part one includes all the activities associated with making something: designing it purchasing raw materials, manufacturing and so on. Part two includes all the activities associated with selling something: finding and reaching customers, transacting a sale, distributing the product or delivering the service. A new business model's plot may turn on designing a new product for an unmet need ... Or it may turn on a process innovation, a better way of making or selling or distributing an already proven product or service.

Magretta cites Dell as a company that has created a powerful business model by identifying value chain processes that it would like to undertake, and has sought partners, complementors, to undertake those it will not. In this way Dell, by selling directly to end-users, has the vital information necessary to manage inventory better than its competitors *and* avoids the high costs of holding inventory and the very high cost of obsolescence due to the rapid application of technology. Magretta identifies the notion that there are supplier *and* customer relationship management issues here that, while they may appear as separate and distinct entities, they do in fact require contiguous solutions. Another question is "Is there a generic approach or model that may be used to understand the successes of Dell, Wal-Mart and others?"

If one of the key success factors for firms operating in a New Economy context is to minimise actual ownership of assets and instead access resources by collaborating with others in value chains, then the dynamics of that collaboration is critical. Being able to supply part of the picture through a focused product capability and competency is useless, if there are not other partners willing and capable of filling in the other bits of the picture to offer a coherent whole to the end customer. Notions of business "partnerships" have been around a long time, but this paper seeks to explore what are the factors that drive true partnership innovations and therefore competitive advantage. What makes a "willing partner" and a "capable partner"?

Effective organisations now work together to identify core assets, processes, and capabilities and having done so work together at optimising their use and the "returns to the assets managed". Indeed we have begun to see new concepts appearing in the management vocabulary. Co-productivity is a more operational role by suppliers, distributors and customers in which they undertake tasks that hitherto were the role of other channel/chain participants. These can and do involve aspects of cooperative product and service innovation. Co-opetition (often known as co-ompetition) describes the situation in which competitors work together to meet individual objectives using mutual facilities. Co-destiny is used to ascertain the extent to which members of a business coalition share the same objectives, strategies and values, thereby ensuring that all aspects of cooperation are likely to be successful.

### **Cooperative innovation**

It was apparent to Teece (1992) in the early 1990s that the understanding of innovation required some revision as partnership arrangements became increasingly commonplace. Tether (2002) investigated these trends and suggested a definition of "innovation cooperation" within the context of research aimed at exploring the status of collaborative innovation within UK industry:

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Innovation cooperation means active participation in joint R&D and other technological innovation projects with other organisations. It does not necessarily imply that both partners derive immediate commercial benefits from the venture. Pure contracting out work (e.g. outsourcing to achieve lower costs) where there is no active participation, is not regarded as cooperation (Tether, 2002).

This research identified patterns and motives for the approaches to partnership innovation relationships. A significant proportion of the companies approached cooperated with suppliers, customers and competitors, suggesting that cooperation within the supply chain was by no means new.

Reasons for partnered innovation were reported as a matching of resources that were not available in the one organisation, risk reduction and product-market development, i.e. by working with a customer on a development project there is the possibility that other customers will accept an innovation. Of particular relevance to customers within the supply chain, a number of motives were identified:

- providing complementary knowledge and user know-how;
- providing a balance between performance and price;
- providing an insight into user behaviour that may modify or refine the innovation; and
- create an awareness of the innovation among other potential users.

The research suggested a more financially oriented approach to cooperation with suppliers in which transactions costs are becoming increasingly inadequate to describe the context of knowledge and technology management. It also identified the fact that outsourcing decisions have strategic implications. This was highlighted recently in the food processing industry in Australia. A leading company, short of production capacity, arranged for its nearest competitor to manufacture a standard product on its behalf while the company manufactured and introduced a new product.

McLoughlin (1999) also identifies the linkage between technology, organisation and innovation, suggesting:

Increasingly, it has been argued, innovative capacity is dependent upon building linkages through collaborative relationships (Coombs *et al.*, 1996). . . . this enables learning which adds to an organisation's existing knowledge base and the creation of completely new knowledge (Inkpen, 1996) and also contributes to "novelty and variety in the economic system" by creating "new economic resources which otherwise simply would not exist" (Coombs *et al.*, 1996). Such collaboration might involve sub-contracting, strategic alliances or joint ventures . . .

McLoughlin cites Schumpeter's work as a principal starting point for linking economic growth with technology, specifically with business cycles. Schumpeter directed thinking along the lines that the distinction between product and process innovation should be made. Product innovation involves the inclusion of new technology into new and existing products and services. Process innovation involves the adoption of new technology into the production processes of new products and services.

Our interests here are focussed more on the significance of innovation in the value creation process and its role in creating competitive advantage. Sutton (1998) gives this emphasis. He suggests innovation may: " . . . involve the introduction of new or modified products or services which are intended to be more attractive to consumers,

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or of new processes which lower costs or improve quality and so allow increased sales . . .”. Sutton also makes a point concerning organisational changes that “improve a firm’s ability to deliver quickly and reliably”, suggesting that in manufacturing industries the impact of an improvement in the service characteristics of a product may be more important than changes to its physical characteristics in defining the value of an innovation as it is seen by the purchaser. Depending upon the industry, it may be that consumers may be strongly influenced by service characteristics offering benefits that improve their management of assets and productivity, time, cost, performance and risk.

The notion of partnered innovation is also suggested by Kay (1993) who considers innovation as one of three distinctive capabilities required for competitive advantage; the others being organisational architecture and reputation (brand characteristics). Kay sees them as necessary features and when combined into a mutually reinforcing market force gives rise to competitive advantage.

### **Process management versus functional management**

The growing interests that process orientation and, therefore, process innovation have for the virtual organisation is its philosophy. It enables virtuality to become reality. Virtuality defines the ability to create partnerships across companies using value chain (or value net) structures with complementary companies that work together to maximise the value delivered to customers. The network model (or virtual organisation model) comprises independently owned enterprises that together are a virtual corporation. It is a synchronised model of distributed processes that work together towards a common goal. In the network model, information management becomes a strategic asset. The incentive for organisations is to facilitate access to new market value-creation opportunities.

Similarly the network model has nurtured cooperative product innovation. Product innovation is driven by speed (time-to-market) as opposed to process innovation – driven more by production economies of scope, integration and coordination, whereas process innovation involves an evaluation of alternative ways in which an organisation can create, produce, communicate, deliver and service value for customers.

It follows that partner/cooperative innovation combines elements of process and product innovation management within a “network structure” to create a product-service response that neither partner could create using its own resources. Examples of partnership innovation management extend in both directions of the supply chain. They include supplier relationship management such as that demonstrated between Dell and its myriad of suppliers and examples of customer relationship management such as the relationship that Caterpillar has built with its distributor/service network.

For Dell the partnership arrangements create a number of benefits; the ability to leverage suppliers’ tangible and intangible assets together with ability to reduce the company’s operating cycle *and* cash cycle has created huge competitive advantage for the company. By contrast Caterpillar has generated strong relationships with distributors to develop cooperative innovative approaches to resolving service problems that inevitably occur at a distance. For both Dell and Caterpillar, communication through efficient ICT systems (information communications technology) are a critical input to the partnership. Dell requires accurate two-way

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communication with its suppliers if the production schedules of both are to work efficiently. Similarly with Caterpillar the technology of remote diagnostics can only be useful as long as the communications and information transfer takes place.

When partner/cooperative innovations are closely examined they reveal an interesting integration of all the relevant aspects of knowledge, technology, and process and relationship management. This paper will suggest a model that demonstrates the development of partnership innovation development and management that can be used to evaluate both the strategic effectiveness and the operational efficiencies. Thus our working definition becomes:

*Partnership/cooperative innovation* combines elements of process innovation management and product innovation management within a network structure that neither partner can create using its own resources to meet customer/market determined expectations for product and/or service performance at an economic (viable) cost. Third party involvement is typical.

This is a sufficient working definition to begin with. For the network structures that are now commonplace in most industries the concept can be interpreted as a means by which two or more partner organisations contribute exclusive resources that are necessary to provide additional added value to a target customer group that may, or may not, be common to all of the partners. Essentially the network offers the partnership the ability to differentiate the product (or the service) or the service aspects of the product-service offer.

### **The value chain/virtual organization model as a value creating system**

The value chain concept offers management a means by which they can evaluate both existing and new strategic opportunities to create customer and partner value. Essentially the value creation system is an analytical tool; it facilitates the identification and evaluation of strategic alternatives. It is interesting to note that while the concept is widely referred too it is not so widely understood; this may be due to the fact that many organisations continue to have difficulty with the process vs. function concept. Essentially the “virtual” concept is one in which functions are outsourced and become contributing activities to the processes that drive the value creation system. To be effective as a method of business model analysis this requires a “clean sheet”, assuming no restrictions from existing processes, capabilities or assets so they can identify “ideal” strategy and structure alternatives. It also assumes the availability of structured market information – an application of knowledge management. In the real world there may be (indeed it is very likely there will be) constraints and reasons why the “ideal” cannot be selected and implemented. However the analysis will have provided an insight into how best the opportunity might be pursued and identify potential problems for successful implementation of the selected strategy.

Industry-level value chain analysis is an effective way to identify the interplay between different players in any specific industry. It helps identify the resources required to compete successfully in an industry, and where individual organisations should locate within that industry to maximise their “returns” and those of the value chain. It is also potentially a useful method for describing the processes and activities within and around an organisation and relating them to an analysis of the organisation’s competitive strengths and weaknesses (Lindgren and Bandhold, 2003). While the value chain is becoming more widely accepted as a planning and

management model, much remains to be done concerning performance management and the issues this presents for inter-organisational relationships. If a value chain only operates based on altruistic cooperation between players, the model is clearly flawed. Rather it is suggested that value chain analysis not only charts optimum strategic options for a firm, but also highlights its perils.

This is not to suggest that the network model of virtual organisation is the only approach. Value chain analysis is equally applicable to vertically integrated organisations as it is to virtual organisations. The whole point of the approach is to identify optimal solutions; solutions that are acceptable to all stakeholders – customers, suppliers and investors. Any organisation should be aware of the structure of the value adding processes within its industry and of its own location within this “structure”.

Value chain analysis identifies the flow of added value through the value creation processes within both the industry and the firm. It follows that, regardless of its configuration, it is the role of the firm’s executives to be aware of where and how value is created and who benefits from the processes. If the value processes are monitored frequently, a flexible and aware organisation can configure itself (and its partners if these exist) and play an important role in capturing a dominant share of the value created by these processes.

Customer-focused companies create additional value for their customers by building value chains that identify, produce, deliver, and service customer needs. They often create multi-enterprise organisations that integrate supply chain efficiencies with demand chain management processes that anticipate customer expectations and ensure the availability of products and services in the right place, at the right time, at the required level of service, and at the lowest possible supply chain cost. However, it would be somewhat trite to assume there to be no difficulties here.

In the business model of the future, value chains compete rather than individual companies, and the connectivity and process excellence are key challenges. (AeIGT: 2003 cited in Johns *et al.* (2005))

But there are other problems that offer challenges, such as coordination, communication and overall control. These comments are not new; Johns and his co-authors have identified “co-coordinating management” as a common theme in the literature. They suggest that organisational structures that are functionally organised have difficulties in meeting the primary requirements of value chain management – defining and meeting end-customer needs, and ensuring that these are transparent throughout the value chain organization. Johns *et al.* suggest that it is connectivity (and communication) that is the problem; however, both connectivity and communication are based on value optimisation and managed equity throughout the value chain. For these to be effective, a timely, accurate and transparent information system is essential.

It follows that close monitoring of the value chain identifies significant changes in value and value delivery opportunities. It also suggests that the approach will lend itself to monitoring the business model and the business environment to identify how the organisation’s business model could be modified such that even greater added value might be created for customers; and how partnerships with other organisations could make this effective.

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Clearly any partnership innovation must be beneficial to all parties. Furthermore partnership innovation can take place between any value chain partners – innovations can be upstream or downstream and often both! In this and the other examples we must ask if there is some model or process that facilitates the procedure.

- What drives industry competitiveness?
- What are the customer value drivers – is there scope to add value? How? Where?
- Can this added value opportunity be used to develop mutual competitive advantage?
- Is cooperative innovation in the value chain the pathway to creating added value?
- Is there actually a need for other partners?
- What resources are required and what is the impact on customer performance?
- What are the information requirements for managing the complex interactions of evaluation, integration and communication?

### Examples of partnership innovation

The introduction of CFPR (collaborative planning, forecasting and replenishment) by Metcash, an Australian fast moving consumer goods distributor with turnover of \$A7.6 billion, is an example. Initially introduced with 20 suppliers the mutual benefits became readily apparent. Suppliers are given a “better picture of product flows through the warehouses and stores”; this benefited both Metcash and its suppliers, and supplier forecasting gained accuracy while, for Metcash, information on logistics efficiencies became apparent very quickly. A downstream supply partnership innovation involving Metcash and 7 Eleven offers 7 Eleven an opportunity to optimise its delivery programme. Metcash will afford 7 Eleven access to a one stop buying and delivery facility resulting in a reduction in administration and distribution costs; this will result in 7 Eleven becoming more price competitive through increased productivity. Metcash suggests that substantial savings are available over the next five years for their retailer customers through the recently announced initiatives in logistics and partnership arrangements with major manufacturers Crowe (2004).

A closer consideration of value chain cooperative innovation demonstrates increasing leverage of selected partner expertise in one or more of these areas. Often what is interesting is that, where collaboration between complementary organisations may be expected, collaboration between competitors is the norm in a number of industries. For example, a large number of marketplace competitors are R&D collaborators in the automotive industry. *Industry Week* (2005) reports on GM and Ford's collaborative development of a six-speed automatic transmission for front-wheel drive vehicles. “Shared risk, costs and technological capabilities” are expressed as the reason for the development, together with the “advantage of realising economies of scale working with a partner”. Other projects typically match non-core, but essential, processes. Timken and SKF, bearing manufacturers, share logistics and e-business activities. Panasonic and Hitachi are collaborating to develop and expand the worldwide market for plasma TVs. Their agreement includes development, production, marketing and intellectual property. However, there are potential issues. For example, a comment in the *Industry Week* report suggests that market place issues

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of branding can create problems. It is suggested that collaboration works when the shared interests concern cost and risk, but the customer and the shareholder views of value may be more influenced by individual reputations for innovation, quality, and reliability – the characteristics that create the brand.

AWA is an Australian company that has taken a focused view of value chain management in the information technology (IT) services market. The company has its origins in the early days of radio, being a pre-First World War amalgamation of the local Telefunken and Marconi agents as part of a world wide settlement of patent disputes over technology. These days the company's principal operations are in the IT services market, particularly for larger corporate users. Over the last 25 years an interesting evolution has occurred.

The genesis of the current business was in the early 1980s as an in-house service arm directly supporting product sales of mid range computer systems based on the PICK operating system. Service was entirely a derivative of hardware sales. The customer's principal acquisition decision was to buy a computer system, integrating software and hardware as a large capital purchase. On-going service was generally provided in form of annual lump sum maintenance contracts that were more akin to insurance arrangements. The hardware vendor nearly always performed the service and these maintenance contracts typically simply rolled forward for the life of the system. The customer in effect acquired an entire solution for its computing needs from one vendor.

The PICK operating system gradually lost out to Unix, and AWA's hardware sales operation was divested and eventually disappeared as the technology it sold largely became defunct. However, the service operation did not die with its parent, but in the early 1990s reinvented itself as a third party service organization acting as the service arm for IT vendors such as Apple, and for large end users of IT equipment such as government and education institutions. "Service" became a product in its own right – acquired independently of the hardware manufacturer. This was at a time when increasingly the various components of the IT value chain were splintering so that hardware, operating system, application software and service all became discrete elements that were provided by increasingly specialist providers (e.g. Intel, Microsoft, Dell). This required both product innovation and process innovation. From a tight direct linkage from manufacturer to end user through the value chain, new independent partnerships and relationships developed.

In the mid 1990s the market context changed again with the advent of large-scale outsourcing and the market entry of specialist outsourcing organizations such as EDS and CSC. These organizations offered to take over the entire scope of their customers' IT activities; in effect vertically integrating again along the whole of the IT services value chain. AWA did not attempt to compete in offering end to end solutions, but instead made its service offering more focused, forming a new partnership dynamic so that it sat as a quite distinct element in the overall value chain. This enabled it to team with these larger organizations to fulfil specialist roles, essentially as a sub-contractor. The large outsourcer in effect became the value chain co-ordinator, with complex process innovation a key to successfully co-ordinating the various partner inputs.

Arguably this trend to large scale outsourcing runs counter to historical trends in the IT industry itself and in many other industries, where firms have tended to closely define their competencies and maximise strategic positioning through alliances and

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networks, so that the ownership of assets becomes less important than the ability to access them through virtual integration. The success of large-scale outsourcing has been mixed, with the Australian Commonwealth Government moving away from large block contracts. Perhaps not surprisingly then, the market has been changing again with the advent of what is termed “multi-sourcing”. This involves large end users retaining overall responsibility for their IT operations, but selectively outsourcing activities where focussed operators can offer better service delivery and cost efficiencies. Such relationships move well away from any notion of generic service offers, but instead are based on service packages reflecting specific needs, with each service partnership built to meet the specific dynamics of the customer.

From the service providers perspective this evolution has required constant re-invention. The nature of its relationship with its customers has changed from a set piece maintenance contract at fixed rates that were rarely negotiated riding on the back of hardware sales, to a dynamic relationship with a series of partners.

Apart from product innovation this has required significant process innovation. In AWA's case the centerpiece is its “AWAre” proprietary information management system. This is the primary tool for interacting with partners and tailoring the company's services (supply) to meet partner/customer demands (managing service calls). This is not owned but it is accessed and used by major customers, and it is a major element in AWA's access to the value chain and allows it to operate effectively operating within it. While AWAre's principal function is call management, it is in fact the base for all AWA service activities, including interfacing with customers, its own technicians, and agents. In addition, it encompasses not just field activities, but workshops, logistics asset management, and billing. AWAre's historical origins means that it is essentially a relational database. This gives inherent flexibility in managing information and it is very well suited to this type of application, compared to the hierarchical architecture more common in legacy systems.

Perhaps most importantly, through a range of electronic interfaces AWA has been giving customers direct access to its system for over 10 years. This means that the customer or partner has equal visibility over the service delivery process, as does AWA itself. This provides a quite unique platform for partnership innovation, with information on key processes being highly visible.

It follows that partnership/cooperative innovation should be focused on longer-term advantages. This suggests a focus on building on relevant core assets, processes and capabilities, and seeking partners with necessary complementary resources, with the clear objective of creating sustainable competitive advantage for the partnership. This may result in a situation in which an organisation uses the expertise of a partner to create a stronger position with its customer base (customer relationship management or CRM). It may also be one in which an organisation uses its supplier relationship management (SRM) skills to enhance its customer relationship management. In other words CRM and SRM are integrated, or fused, to enhance value delivery to customers. Often this would appear to require a multi-enterprise approach, whereby the integration of a mix of partners' resources are combined in some innovative way to create, or to add value, for customers that exceeds the offer of competitors; as such this creates competitive advantage.

No models exist to demonstrate how cooperative innovation decisions are evaluated. However, with some reasonable assumptions, the implicit activities within

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the process can be deduced. Clearly the end-user customers' value drivers must be identified and understood. Typically this would follow the premise that these represent some product-service characteristic that the customer does "*value*" and provides a benefit that enables a customer to differentiate its offer to their customers (as in a B2B market situation), or perhaps delivers some sought after "status" benefit as in the case when the end-user is a consumer. Value drivers can be described as generic entities such as asset management, performance enhancement, cost management, "time" management, information management, and risk management. Clearly the interpretation of each of these differs but the essential point to be understood is that they are intrinsic elements to achieving customer satisfaction. The decisions to reach are what, how, by who, where and when.

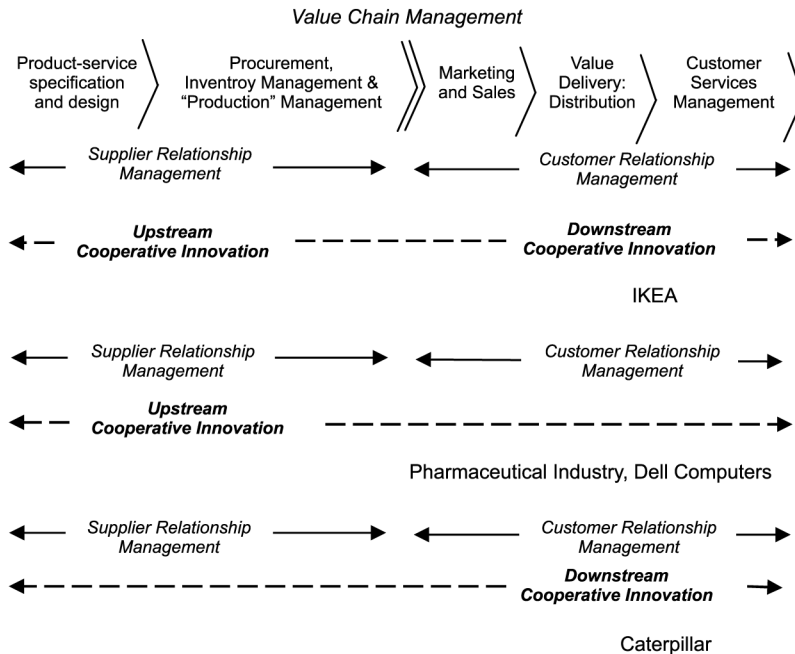
While it is arguable that cooperation is essential throughout the value creation system to create efficiencies it can also be argued that cooperative innovation partnerships exist to create effective value creation and delivery. Efficiency is operational, and reflects the implementation of a strategy designed to create added value for customers *and* competitive advantage for the entire value system. As such it operates with clear operational KPIs (Key Performance Indicators) and establishes an information system that operates by monitoring and reporting variances from the prescribed performance results. The strategic context of the value system requires broader information inputs. First of all it requires an openness concerning the objectives of partners and of their constraints. For example this may include confidential planning information concerning financial and marketing resources; these are essential if the full benefits of any type of cooperation are to be realised, and crucial in the context of cooperative innovation potential.

Figure 1 suggests there are three approaches to cooperative innovation. First we should understand that customer value can be created in a number of locations within the value system. For example IKEA has a value proposition that focuses on a combination of design, quality and competitive price. To deliver this offer IKEA has upstream partnerships with its manufacturer suppliers each of whom employ manufacturing methods worked out between them and IKEA to ensure an overall congruity in style and quality. IKEA also has down stream partnerships with its customers/consumers who, by and large, "sell" the products to themselves, undertake the logistics function (transportation) and complete the manufacturing process by assembling the product themselves. This relationship is an excellent example of co-productivity as well as being one of cooperative innovation.

Figure 1 also identifies an upstream application, typical in pharmaceutical and computer manufacturing, where R&D may be outsourced (pharmaceuticals) or complex assembly work is outsourced and the modules assembled down stream (computers). A typical downstream example is illustrated whereby the expertise and resources of a distributor network are sought. Caterpillar, mentioned earlier, is a typical example, as is the AWA example in which the essential "service the value" process is delivered by AWA on behalf of the large hardware manufacturers.

### **Concluding comments**

One question remains: how are decisions made and what information inputs are required? Clearly there are a number of issues relating to the overall value delivery decision. They include investment decisions about facilities and staff skills, and

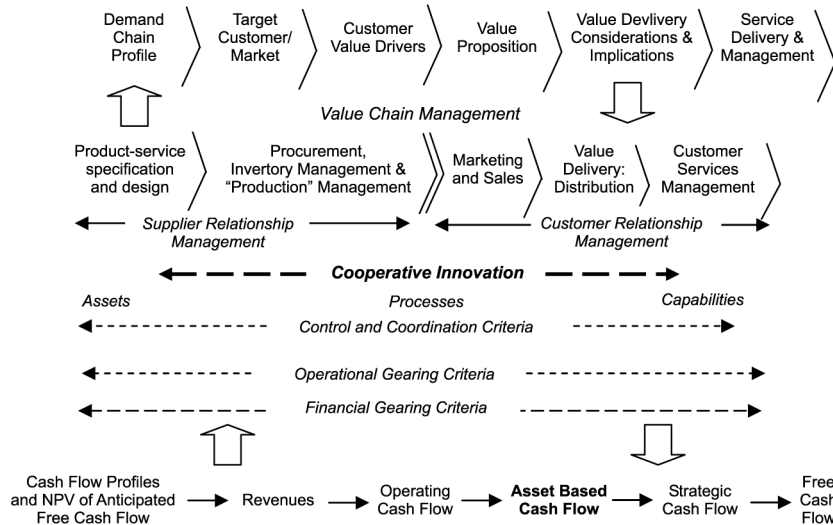


**Figure 1.** Exploring the scope of co-operative/partnership evaluation in value systems

returns that these need to achieve, and whether the volume of activity will be sufficient to justify the investment. Other major questions concern control and coordination criteria; in a customer centric industry not only are customers “demanding” but competition is intense, as response is seen as an important component of customer satisfaction. Given such circumstances the cost of providing service may become very high and may be disproportionate to the benefits realised from direct customer contact. This can be the case with servicing complex equipment where managing very short response times requires not only specialist staff but also requires specialist data management systems (the AWA example explores this issue). If we are to be able to make both cost effective and cost efficient decisions there is a need for an approach that can manage this complex mix of qualitative and quantitative decisions.

Figure 2 identifies this “mix” of decisions. It suggests that the structure of the value chain is first established; of particular importance is the identification of the target customers and their value drivers. Having clearly determined these characteristics, the optional approaches to deliver and service the customer value can then be identified, *and* the important question concerning how customer satisfaction may be increased by partnership/cooperative innovation. It is likely that a number of alternatives exist and these need to be evaluated. Often the up stream/down stream options resolve themselves because of specific customer expectations, but options do exist to influence the decision at the product-service design process stage. However, there remains the need to consider the implications that partnership activities involving assets, processes and capabilities present for control and coordination.

Some examples may help. Among the decisions to be reached are those of which “whose brand?” and “whose customer?” are among the most significant. These raise



**Figure 2.**  
Evaluating the  
partnership/cooperative  
innovation decision

questions concerning the extent to which control and coordination are important, and the costs of the optional positions that are available. In the example of AWA the computer manufacturers use AWA as a service supplier but their relationships vary, depending upon the overall relationship they have with customers and the implications of successful service delivery on the brand image they are attempting to maintain. For this reason the considerations of cost structures (operational gearing) and financing the corporate entity (financial gearing) become significant inputs. Both considerations have market and financial risk implications that can be evaluated. Given the alternatives and the qualitative control and coordination implications, the use of cash flow analysis can be used to evaluate their financial efficacy.

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