

FUJI XEROX

*Corporate societal responsibility: knowledge learning
through sustainable global supply chain management*

1. INTRODUCTION	4
2. THE COMPANY	5
3. CORPORATE SOCIETAL RESPONSIBILITY	7
3.1 Managing CSR issues towards suppliers	7
3.2 Reverse logistics and closed loop supply chains.....	8
4. REMANUFACTURING AND COST BENEFITS.....	10
5. REMANUFACTURING AND ENVIRONMENT.....	12
6. KNOWLEDGE AND COMPETITIVE ADVANTAGE	12
7. REMANUFACTURING AS A COMPETITIVE ADVANTAGE.....	13
9. RESTRUCTURING THE SUPPLY CHAIN.....	15
11. MANAGEMENT IMPLICATIONS AND BENEFITS.....	20
11.1 Further initiatives	21
11.2 Leadership and Internal Entrepreneurs	22
11.3 Human Resources	22
11.4 Stakeholders.....	23
11.5 Environment.....	23
11.6 Managing Partnerships.....	24
13. REFERENCES	25

EXECUTIVE SUMMARY

The role of Corporate Societal Responsibility (CSR) is a concept traditionally avoided by companies and regarded as the responsibility of governments and non-governmental organisations. It is, however, increasingly becoming a concept that is critical for companies to identify to maintain their competitive advantage in the market. Increasing government pressure to shift the responsibility of waste management and recycling to the producer will force companies to address their procedures and responsibilities. Also, consumer pressure and decision making requires a company to achieve a high level of branding and reputation to ensure market share. These increasingly important external factors for companies have produced a new innovative business model largely pioneered by Fuji-Xerox.

It requires the formation of a cyclical supply chain, which derives significant advantages for companies from a range of industries. Through implementation of product recovery a company can remanufacture the product, frequently producing a product that is superior to the original. This reduces the demand for raw materials and provides cost saving features. Knowledge learning is also facilitated through product examination, which is subsequently added to the management information system. This allows collaboration and innovation across departments in providing a holistic approach to product creation. In addition the companies impact on the environment is greatly reduced, increasing its branding, reputation and sustainability.

This model is a structural add-on to current supply chains and provides a solution for companies addressing sustainability issues. It provides an avenue to align corporate strategy with CSR and sustainability. It illustrates that competitive advantage can be obtained through embracing CSR, ensuring future sustainability of a company.

1. Introduction

Corporate societal responsibility (CSR) is an increasing issue for most corporations around the world. Interest groups and the media increasingly highlight pollution or extortion issues around the world, educating end users on how their products are manufactured through the supply chain. Governments are increasingly realising that transfer of responsibility for product disposal will need to be shifted to corporations as waste management costs reach all time highs. A shift towards legislating regulations for environmental responsibility will dramatically effect operating procedures for companies in all industries globally. Therefore to maintain competitive advantage in the market place, innovation will be essential to plan for sustainable competitive practices to ensure company success.

Japan's Fuji Xerox is a leader in CSR issues, particularly ones involving the environment. They have implemented strategies aimed at far more than just compliance in respect to current regulations, rather forecasting for future scenarios. This report will look at who Fuji Xerox is and how the company has developed from manufacturing and renting out office equipment to becoming a fully integrated cyclical supply chain.

Following the introduction to Fuji Xerox, an analysis of the environmental benefits resulting from a cyclical supply chain is presented. This analysis illustrates the benefits of such a strategy effect both the internal and external environmental factors. The report then looks at how knowledge management in an international enterprise helps sustain the competitive advantage, and how good knowledge management helps sustain remanufacturing as a competitive advantage.

2. The Company

Fuji Xerox, one of the world's leading manufacturers of office equipment started out as a 1962 joint venture between Japan's Fuji Photo Film Co Ltd and the Anglo-American Rank Xerox Limited. In March 2004 the company had just over 34,000 employees (down from 72,400 in 2002 (Benn & Dunphy 2004, p259)). Fuji Xerox generated ¥10,000,000,000,000 in revenue (Bartlett et al, 2004, p 571; Fuji Xerox 2005).

Fuji Xerox was established so Rank Xerox could access the lucrative Japanese market. Strict Japanese government regulation on foreign companies entering Japan forced Rank Xerox to make Fuji Xerox a full manufacturing company and not just a sales organization as first intended (Bartlett et al, 2004, p 572).

Today Fuji Xerox is based in Tokyo. Research is conducted at the company's Corporate Research Centre in Nakai, Japan and the FX Palo Alto Laboratory in California, while R&D is confined to Japanese facilities. Except for manufacturing plants in PRC and Taiwan overseas operations are mostly confined to sales and services. Fuji Xerox is based in PRC, South Korea, Japan, most of South East Asia, Australia, New Zealand and the United States (Fuji Xerox 2005).



Fuji Xerox' product range

- Digital color copying machines
- Digital color printing systems
- Digital multifunction machines (copying machine, facsimile, printer)
- Digital publishing systems
- Computers
- Workstations
- Networks and servers
- Document management solutions and services
- Document management software,
- Engineering systems
- Color plotters
- Plain paper plotters
- Large-format copying machines
- Image processing systems
- Document projectors
- Copying machine related equipment,

Often referring to itself as The Document Company, Fuji Xerox manufactures most office equipment. In addition Fuji Xerox' management arrange business seminars and video training courses in on various topic relevant to managing major international enterprises. The company is also involved in systems development and integration (Fuji Xerox 2005).

Business started off with Fuji Xerox renting its products to customers. However, business soon moved on to selling and leasing the products. Fuji Xerox provided services contracts to repair or replace consumables. This was a great learning process for Fuji Xerox and the company was able to identify flaws in its products and improve them. The first steps towards remanufacturing and the closed loop supply chain were taken (Bartlett et al, 2004, p 573; Benn & Dunphy 2004, p 259).

Fuji Xerox takes it corporate societal responsibilities (CSR) seriously and has developed guidelines and goals for how to achieve these. In response to EU regulations and other environmental regulations and responsibilities Fuji Xerox has developed recycling facilities in Thailand and Japan. In 2000 Fuji Xerox was the first to achieve zero landfill of used products in Japan (Fuji Xerox, 2005).

Closer to home, Fuji Xerox' operations in Sydney developed remanufacturing facilities in 1993. Prior to the development of the remanufacture facilities in Sydney valuable components would be considered waste even with minor defects.

3. Corporate Societal Responsibility

Large companies need to build social issues into strategy in a way which reflects their actual business importance. They need to articulate business's social contribution and define its ultimate purpose in a way that has more subtlety than "the business of business is business" worldview and is less defensive than most current CSR approaches. It can help to view the relationship between big business and society in this respect as an implicit "social contract."

Companies are to an increasing extent being held responsible for the environmental and social impacts of their products in their entire lifecycle, i.e. use of raw materials, production, transportation, use and disposal. In order to reduce the environmental and social impacts, a company therefore needs to cooperate with its supply-chain partners. This task is likely to pose challenges for many companies due to the increasingly complex nature of supply chains. This complexity is largely owed to the increased outsourcing of activities and globalisation of the chains.

3.1 Managing CSR issues towards suppliers

An increasing amount of companies outsource parts of their production to low-wage countries, which are often characterised by poorer environmental and social standards. In situations of increased outsourcing to Third World countries, it becomes relevant to discuss how companies can ensure environmentally and socially sound conditions at their suppliers, and what the main challenges related to this task are. Issues such as working

conditions, child labour and human rights are key areas to address when considering this problem.

3.2 Reverse logistics and closed loop supply chains

Objectives of these issues relate to: positive environmental impact, competitive advancement, and regaining value of the physical product. An essential part of today's business is the retrieving of new or used products from customers for the purpose of dispose or reuse. Both cases require a particular design of supply chains that not only are able to process the products in time- and cost effective ways, but also where change in the product attributes itself (dismantling or refurbishing) may be possible.

As resources around the world become increasingly scarce companies are following government and consumer pressure and looking at new ways of manufacturing. This report looks at how knowledge management can create and sustain a closed loop supply chain as in the case of Fuji Xerox. In a closed loop supply chain there are of course positive environmental impact, competitive advancement and regaining value of the physical product. Fuji Xerox has developed recycling facilities in Thailand and Japan.

In 2000 Fuji Xerox was the first to achieve zero landfill of used products in Japan (Fuji Xerox, 2005). Closer to home, Fuji Xerox' operations in Sydney developed remanufacturing facilities in 1993. Prior to the development of the remanufacture facilities in Sydney valuable components would be considered waste even with minor defects. The new operation ensures the reuse of all of these components and even improving the performance of the products (Benn & Dunphy 2004, p 259).

3.3 Sustainable supply chains

Economic prosperity, environmental quality and social justice (= triple bottom line) will be more and more the driving forces for trans-national corporations (Durand 2005). However, these issues will not only affect a single company, but also the management network of suppliers and distributors of companies, the supply chain. However, SCM refers rather to economic than environmental or social issues. As SCM goes beyond the borders of a company and looks at the total flow of goods and information it can solve the traditional trade-off-dilemma of a logistics manager whether to concentrate on logistics costs or on logistics service in order to offer value to a customer. SCM offers techniques and tools that can help to reduce duplication of costs and increase therefore the use of capacities of all supply chain members. That can also impact the social and ecological dimension of such a chain (Durand 2005).

3.4 CSR opportunities

In relevant comparison to the environmental conscious corporations of the 1990s CSR represent great opportunities. First of all it is a pre-emptive move to avoid consumers criticising and targeting the corporation (Durand, 2005). If company manages to be ahead of popular belief it can avoid negative publicity in the media and sustain a favourable image with the consumer.

Small and large companies should be aware of social pressure. It often identifies an unmet social need or consumer preference. If a company identify and supply these before others do this can be a great first mover advantage. Examples of these

opportunities is the growing demand for healthy fast food in the Western world and demand for renewable energy (Davis 2005). Just as important, these outcomes have posed not just risks to companies, but also have generated value-creation opportunities.

4. Remanufacturing and cost benefits

Eco Manufacturing processes or remanufacturing can give significant competitive advantages to an organization like Fuji Xerox (Benn 2004). The primary goal for manufacturing industries is to reduce the costs of material and parts that constitute a major part of their direct manufacturing activities while the cost of disposal of worn out parts have increased substantially as increased legislation on reducing landfills have exacerbated the problem (Ayres 1997). As developed and developing countries are facing increased pressures on developing efficient systems to reduce waste; manufacturing companies are now facing the challenge of improving their waste disposal systems systematically. An efficient solution is incorporating remanufacturing processes. Remanufacturing began in the 1980's when companies like Xerox would lease photocopy

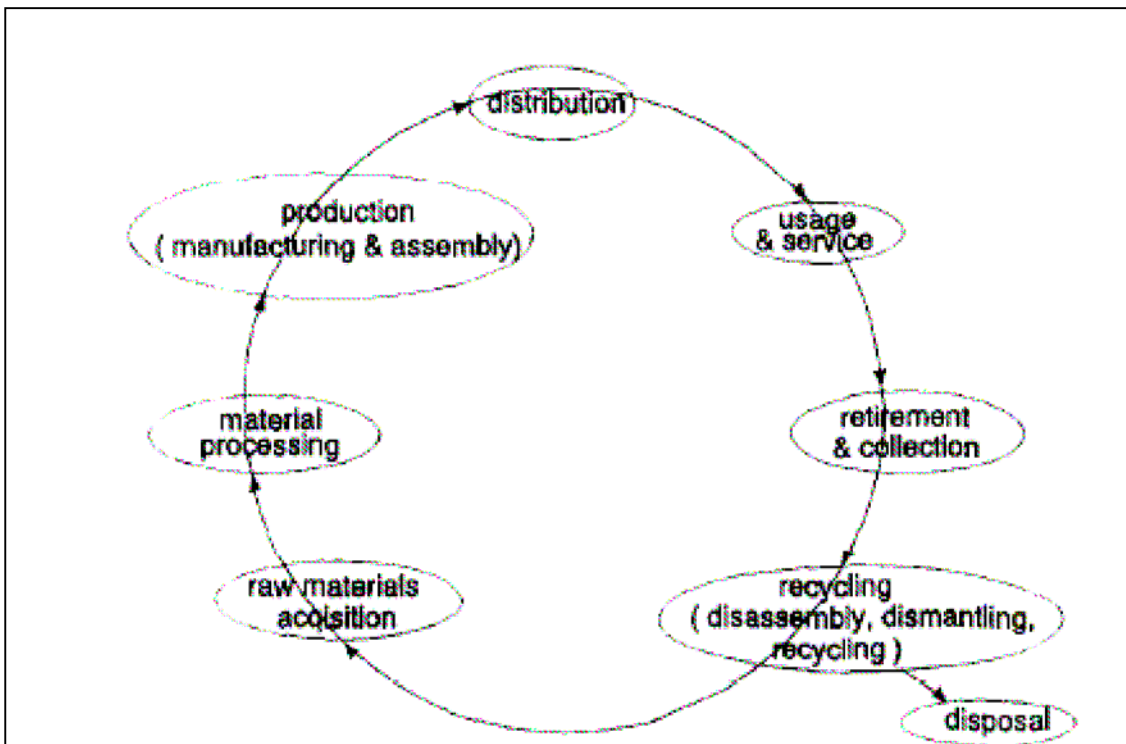


Fig. 4. A product life cycle scheme.

machines to its customers and would 'take back' the machine after its end of life. Xerox would disassemble the machines and the worn out parts would be usually taken by independent remanufacturing contractors who would then resell them to customers. However as quality suffered Xerox decided to set up its own manufacturing unit with Rank Xerox and dubbed it as 'asset recovery' process which became highly successful (Ayers 1997). It's important to distinguish remanufacturing from recycling and recovery as remanufacturing begins with the recovery of worn out products, disassembling them, cleaning, inspecting, and testing them to decide if can be reused while others become waste (Geraldo 2000). These used parts are combined with some new ones to rebuild the original product. In the figure to the right a typical life cycle of a product life cycle is captured (Ron 1998). Remanufactured products quality standards are comparable with new ones.

The benefits of remanufacturing have wide ranging implications to all stakeholders ranging from employees, customers, shareholders, and society. While employees learn new processes by using their creativity, customers benefit from reduced costs as the benefits from saving on remanufacturing are passed on to the customer, shareholders benefit from increased profits and society benefits from a decrease in landfills and decrease in environmental degradation (Giuntini 2003). However remanufacturing has not become wide spread as there are several factors that hinder the acceptance of remanufacturing as a viable process. The primary reason is the additional cost of training the existing workforce. As remanufacturing involves high training costs which is markedly different from the traditional assembly line model manufactures do not seem to see the benefit of it. Another argument is that remanufacturing cannot achieve economies of scale and hence cannot be dissipated across the globe to all industries. However this argument is flawed as in the further reading we will be able to prove that a company like Fuji Xerox has not only been able to create a profitable remanufacturing facility but has also been able to scale this model on a global worldwide basis (Giuntini 2003). A further argument states that remanufacturing venture cannot create profit however quite the opposite for remanufacturing is true. For example in the U.S. there are over 70,000

remanufacturing firms with total sales of \$53 billion and average profit margins exceed 20% (Lund 1998, Nasr et al. 1998).

5. Remanufacturing and Environment

The strongest case for remanufacturing is related to environmental degradation that has substantially increased since the industrial revolution. Primary among them are increase in population, natural resource reduction, wide spread pollution and increase on land for food production. The primary goal to improve our environment is the ability to use process like efficient recycling and remanufacturing, increase spending on Research and Development on finding sustainable business and clean manufacturing technologies (O'Brien 1999).

6. Knowledge and competitive advantage

Knowledge-based enterprises acknowledge and exploit information as a source of wealth and as a means to develop a sustainable competitive advantage (Hejduk 2005). Fuji Xerox managers forayed into this new venture, as they possessed an entrepreneurial vision to make remanufacturing a sustainable business while employing new technological skills by employing a skilled workforce. The team, which initially started with 3 persons, has built a knowledge repertoire with a team of 120 personnel who have become skilled at this process through extensive training and shared knowledge. From a strategic perspective, knowledge can be regarded a critical source of resource development of the firm (Lundan 2002, Conner 1996). A firm can increase and create new resources by deploying knowledge based processes across its manufacturing

facilities if these processes are adequately harnessed. Fuji Xerox was able to understand the value of knowledge deployment in a relatively new manufacturing process and thus gave its key employees the necessary resources to build this remanufacturing facility. Fuji Xerox also realised that increased inter – business flows, where flows are considered a basic characteristic of a networked organization could become a give them a strategic advantage against their competitors (Lunden 2002).

7. Remanufacturing as a competitive advantage

The management of knowledge is viewed as a strategic objective as companies seek to improve their knowledge related competencies, capabilities and competencies to gain a competitive advantage (Lunden 2002). Fuji Xerox seeks to transfer the knowledge it has developed to its manufacturing locations across the world by using both the explicit and tacit knowledge it has acquired (Polanyi 1962). Explicit knowledge is information that is easy to codify and can be easily dissipated across an organisation while tacit knowledge is difficult to codify and the ability for an organisation to develop an understanding of these can prove to be markedly different from procedures and systems that exist in a typical manufacturing facilities (Polanyi 1962, Grant 1997). The ability to refine and understand these processes intensely has given Fuji Xerox the ability to increase its waste recovery systems to an optimum level. These processes have been refined and reworked by the staff at the Eco manufacturing unit through a combination of trial and error and by extensively studying the damaged and worn out parts before they are remanufactured and shipped back to its facilities. The information is used to improve the usability and life of future parts.

8. Fuji Xerox and networks

Fuji Xerox has gained immense benefits to its parent organisation by creating an inter-organisational network that has allowed Fuji Xerox to build multiple relationships between the focal MNC and external stakeholders like its employees, competitors, research institutions and others (Hakansson 1989, Snehota 1993, Lundan 2002). The new evolving trend has broken free from the traditional strategies of the 'centre – for – global' and 'local – for local' models and has replaced it with a 'locally leveraged and globally linked' model (Bartlett 2003). The focus is that companies should leverage local knowledge and innovations and make it available for other subsidiaries worldwide to gain significant cost benefits. For example Fuji Xerox has created innovative capabilities by innovating remanufacturing techniques to new product designs worldwide. For example the Engineering and Development group has improved on uses for components and materials by redesigning a 15-cent springs on a roller that now saves the local affiliate A\$1 million per annum and the US affiliate US \$ 40 million. Fuji Xerox now seeks to make available all resources and capabilities to its facilities worldwide with a vision that these innovations be ramped up to a global scale.

While Fuji Xerox has created immense financial benefits to its parent company by successfully deploying remanufacturing processes to its organization; it has also built worldwide capabilities by significant export benefits by networking with other manufacturing and remanufacturing facilities across USA, Brazil, Holland and Japan and have earned significant export earnings in a period of 8-10 years (Benn 2004). Global manufacturers in the photocopier businesses have realised the benefit of remanufacturing processes and have partnered with Fuji Xerox to introduce remanufacturing for their components. The benefits the managers have identified are:

- A decrease in landfills.
- Improved communication with stakeholders.
- Reduction in waste.
- Improving existing manufacturing systems after studying stress on earlier manufactured components.

Fuji Xerox has also partnered with educational institutions like universities to research in the areas of eco friendly manufacturing and have successfully implement environmental friendly across offices (Benn 2004).

Fuji Xerox also seeks to dissipate this learning process of remanufacturing of photocopier machines to other industries like telecommunications, computers, televisions, etcetera where it hopes to bring in cost savings while creating a sustainable environment (Benn 2004).

9. Restructuring the Supply Chain

The aim of Fuji Xerox's Eco-manufacturing plant is the create a supply chain that is cyclical. Traditionally a supply chain has been a linear process of a value creation that leads to an end product being produced for the consumer. Supply chain management has been focussed on improving efficiency within the chain by optimising a range of processes from sourcing and logistics to marketing and distribution. This plays a vital part in the process, however Fuji Xerox are looking beyond traditional barriers to implement a supply chain solution that enhances knowledge learning, improves efficiency, ensures corporate sustainability and provides further cost benefits. Through

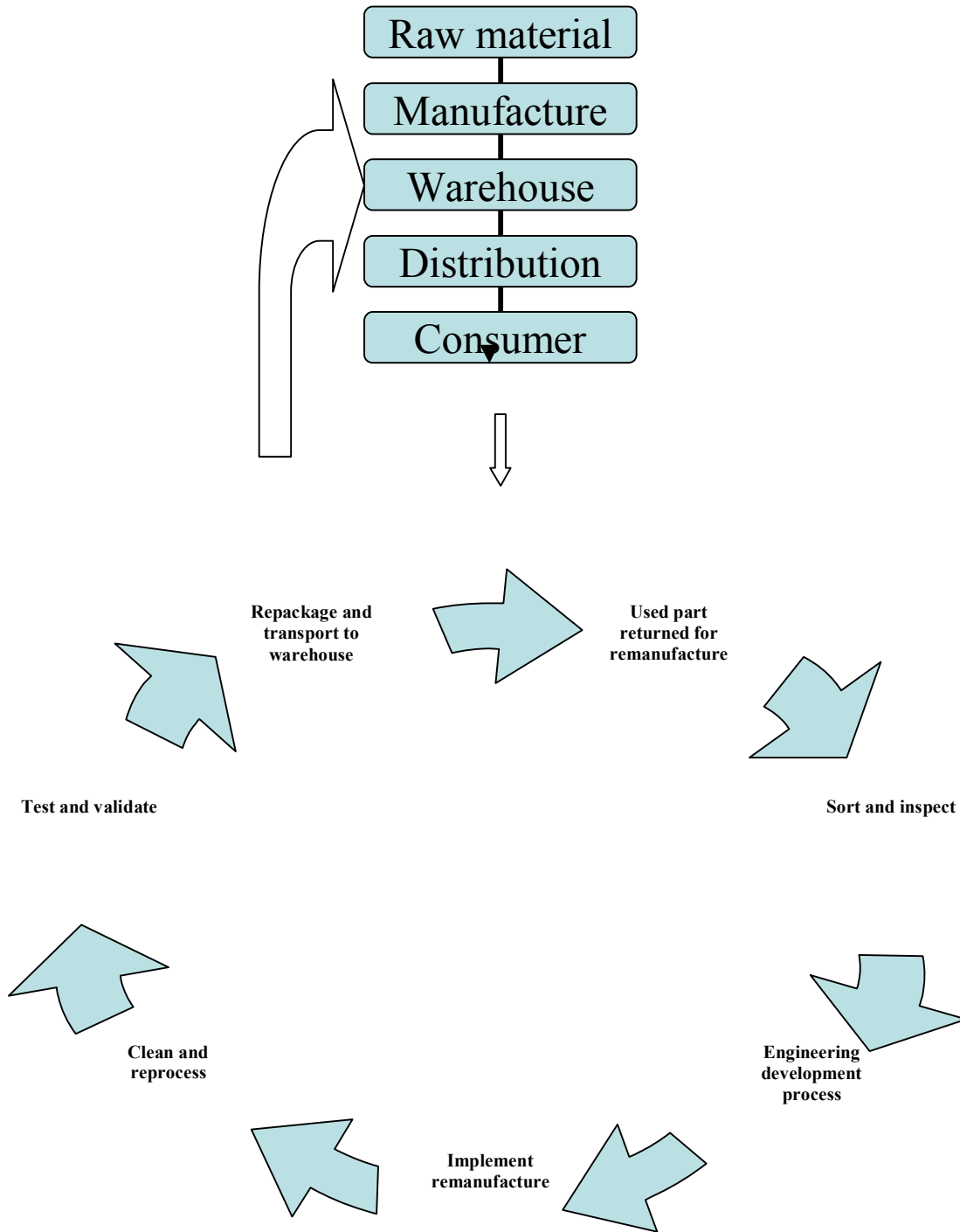
the concept of remanufacturing and the creation of a cyclical supply chain, Fuji Xerox have heralded the arrival of a new business model for corporate sustainability.

Remanufacturing is a complimentary strategy to traditional supply chain solutions. It is another process by which a company can improve its operating efficiency. The key area is to provide a facility that can join the link between the end of the product life cycle and the manufacturing process. This has been achieved by Fuji Xerox in its innovative creation of an Eco-manufacturing plant.

The Eco-manufacturing plant is divided into six areas of operation; fuser rollers, laser optical systems, electronics, magnetic rollers, mechanics, chemistry, signature analysis and print cartridge remanufacture (Fuji Xerox, 2005). They have identified these key areas as components that contribute in the greatest part to waste management issues and are the core attributes of their products. Once you have identified the key processes then a company can begin to look at how to remanufacture these consumables. It is here where a company can begin to create a strategy for a cyclical supply chain.

A cyclical supply chain provides two main solutions to corporate sustainability; firstly, it improves supply chain efficiency which provides cost effectiveness; secondly, it facilitates environmental responsibility which aligns company strategy with long term sustainability.

10. Cyclical Supply Chain



The implementation of such a supply chain solution requires the integration of information systems. This enables a company to track and monitor products within the supply chain to enable the recovery of components. Fuji Xerox have also initiated a free reclaimant scheme to ensure product recovery and to educate customers on the process. Fuji Xerox have also implemented a technology system called System 21 (Dexter & Benn, 2004). It has raised successful recovery of products to 98 percent and increased the efficiency of stock replenishment for distributors and consumers. The integration of information systems is not only critical to recovery, as it also plays a key role in facilitating knowledge learning in the supply chain.

The recovery of products enables a company to assess the quality of its product and to enhance innovation through problem solving practices. A traditional supply chain is unable to derive the benefits of analysis as products end up in land fill. Through product recovery, analysis is undertaken to determine product flaws and to subsequently improve reliability and performance. Remanufactured products are often a higher quality product than when first engineered. The analysis is then inputted into the management information system and made available to all areas of remanufacturing. Collaboration can then occur between departments as redesign solutions can often require an integrated diagnosis. This holistic approach to knowledge management promotes innovation and enables a company to derive fiscal benefits from such solutions.

A cyclical supply chain also aligns corporate strategy with sustainability by focussing company initiatives on innovation and not compliance. The strategy of producing competitive advantage through sustainability is an emerging concept in corporate governance and can be illustrated not only by Fuji Xerox. The integration of sustainable practices can also be shown by BP America. Through implementation of sustainability initiatives, BP has increased their competitive advantage in both operating procedures

and market reputation and branding (Percy, 2000). The benefits of such innovative strategies is becoming more apparent in corporate governance as future strategy encompasses this concept.

The benefits of incorporating this strategy into corporate governance of the supply chain can be seen at a broader level as well. By regionalising remanufacturing facilities, Fuji Xerox enjoys reduced importing costs through domestic access to the market. They also benefit from value-added exports as products are often reintroduced into Fuji Xerox's major market, Japan. And finally they benefit from increased environmental responsibility, reducing costs of waste disposal and the advantages of brand reputation. This places Fuji Xerox in a market leading position with constant re-evaluation of innovation and competitive advantage. This dynamic corporate direction heralds a new era of supply chain management that combines core competencies to produce competitive advantage.

Fuji Xerox have created a transferable business model that can be highly applicable to multi-national corporations globally. Fuji Xerox currently have remanufacturing facilities in Australia, USA, Mexico, Brazil, Holland and Japan (Benn, 2004). Through the creation of partnerships and joint ventures, Fuji Xerox is demonstrating to global companies that corporate social responsibility is not a role of government and non-governmental organisations. As environmental regulations continue to be legislated in the coming years, governments will transfer the responsible from society back onto the producer. This will force companies to assess the way that they focus their strategic sustainability.

Fuji Xerox is demonstrating that corporate social responsibility can be easily integrated into operations and can be used to derive competitive advantage for a company. It can

provide profit and branding whilst also ensuring environmentally responsible manufacturing operating procedures. This model can be easily licensed to other companies, as not only is it a restructuring of company operations, it also licenses intellectual property and knowledge learning. This information on how to organise, obtain and analyse is a valuable resource to Fuji Xerox and a valuable resource for many companies in the future.

11. Management Implications and Benefits

Fuji-Xerox during the early 80's tried for the first time to implement a remanufacturing process into its business practice (Bartlett, 2004). However, Xerox was a '1980s'-Global Company using a global strategy that implies centralized production, standardized products and no local commitment or adaptations. The key objective was increasing profits through mass, centralized production for the world market. International managers were home country people with some knowledge of the foreign domain, for example a second language or overseas experience. Remanufacturing business was therefore considered unprofitable for Fuji Xerox according to "global" or home country-based managers (Benn, 2004).

Nevertheless, Fuji Xerox global business strategy has changed since the early 1990s, and today adopts a transnational strategy. The so called "American style" international business strategy also known as International Strategy and the famous Japanese way of centralized production plants and R&D were extremely important for the transition to the Transnational Strategy, once characteristics from both are important for a Transnational company. This evolution made a profitable remanufacturing process feasible.

Following the implementation of this transnational strategy, managers began to be hired at local bases, plants started to be specialized on what the region provides best and a networking of raw materials, suppliers and human resources were established. With the advent of specialisation, managers could pay more attention to business solutions, cost-cutting, and development of local technology (Bartlett, 2004).

The adoption of a transnational strategy has lead Fuji-Xerox to develop a local focus. The potential for managers to display entrepreneurship has increased, as well as providing a comprehensive knowledge management system for the transfer of knowledge on a global basis. The “venture” taken by these researchers provided for the company lower costs, increased profits, and a new group of highly skilled managers and staff.

11.1 Further initiatives

The company has built a desirable position in the global marketplace by positioning itself as an organization focused on remanufacturing research and development for a sustainable business world. The ability to scale this model and encompass other remanufacturing facilities in areas of telecommunications, computers, and electrical components, like switchgear, will become a key competitive strength and a new source of revenue. Although Fuji Xerox has managed to duplicate this model in other countries and for other businesses in the world, it will require a sustained effort to make this model feasible on a global basis. Without doubt, new, highly specialised managerial staff will play an important role.

11.2 Leadership and Internal Entrepreneurs

The adoption of Transnational Strategy by Fuji-Xerox has given to local managers the “power” to take decisions independently, propose solutions, and improve the business with new ideas, things that were not possible for a company with centralized decision making. As an example, in the early 80’s Xerox tried to implement the remanufacturing process, but top managers at the company’s headquarter believed that it would never be profitable, an assumption that was rebuked later with Australian Remanufacturing plant (Benn, 2004). Today the remanufacturing technology is used in many plants around the world, thanks to interdependence of the units and the creation of a worldwide knowledge network.

11.3 Human Resources

Fuji Xerox has accumulated a great number of high skilled employees on the manufacturing and recycling processes since 90’s. Through the last 15 years the company has increased the number of training tools, such as internet based courses, to ensure its employees will adopt and get familiarized to the company’s environment objectives. Constant training is essential to maintain and develop manager’s skills towards remanufacturing and environment consciousness.

In addition, Fuji-Xerox maintains an exchange of researchers and managers among its subsidiaries all over the world, creating global skilled managers, capable to occupy posts in many different environments.

11.4 Stakeholders

Environmental concern has benefited Fuji-Xerox's branding through increased respect and recognition among consumers. An image of a responsible company provides many advantages when securing market position. Subsequently, people are probably today more likely to invest in the company, due to current environmental awareness and natural resources protection. Stakeholders can derive value and future projected growth through a company that has a sustainable corporate strategy.

Stockholders, see in the remanufacturing process a very clean and profitable method to improve the company's growth opportunities. They recognize the capacity of cost reduction through remanufacturing and the strong sale power of an "environmentally clean" product over similar non environmentally conscious competitor's products.

11.5 Environment

With the implementation of remanufacturing process, Fuji Xerox has reduced drastically the demand for raw materials, therefore reducing its reliance on natural resources. Moreover, with less parts replacement the company has incredibly reduced the quantity of waste going to landfill, further protecting the environment from depredation (Benn, 2004).

All these benefits do not bring just environmental benefits, but also financial gains. Recycling reduces costs and provides opportunities to substitute imports, which reduces

exposure to currency rates. It also provides cost savings through remanufacturing and more efficient business operations.

11.6 Managing Partnerships

The knowledge that Fuji Xerox has developed has led to a host of partnerships with institutions to create a continued learning process (Benn, 2004). For example, it ties in with educational institutions like the University of New South Wales and RMIT to enhance research into new remanufacturing capabilities while sharing its own knowledge. This sustains the development of new and innovative ideas. The resultant research with New South Wales led to the development of a 'green office', which has become a key component in the Office care program for Fuji Xerox and its clients (Benn, 2004). These partnerships, also provide the opportunity to create a local environmentally conscious labour force that later can be utilised to increase the company's knowledge asset.

In conclusion, these initiatives have allowed Fuji-Xerox to create new sources of technology and innovation. This facilitates the possibility of sharing a locally developed technology with managers and researchers in its subsidiaries all over the world. It creates a supply chain that revolutionizes the way companies look at product creation and life-cycle. Through integration of operating procedures Fuji-Xerox has been able to attain three core benefits; reduction of environmental impact, cost saving through remanufacturing and a knowledge management system that emphasizes innovation. Fuji Xerox has created a knowledge management information system that is multifaceted in its approach to knowledge gathering and directly reflective of its corporate strategy. Through these innovations a company strategy model has been developed that can incorporate CSR into increased company performance, making this a transferable business model for all competitive sustainable companies.

13. References

Ayres, R, Ferrer, G, And Leynseele, T.V., 1997, 'Eco-Efficiency, Asset Recovery and Remanufacturing', *European Management Journal*, vol.115, no 5, pp.557-574.

Bartlett, C, Ghoshal, S, and Birkinshaw, J, 2003, 'Transnational Management', Fourth Edition, McGraw – Hill Education (Asia), NY, pp.456-465.

Benn, S and Dunphy, D, 2004, 'A case study in strategic sustainability" Fuji Xerox Eco Manufacturing Centre', *Innovation: management, policy and practice*, vol.6, iss.2, pp.119 – 128.

Conner, K.R. and Prahalad, 1996, 'A resource based theory of the firm: knowledge versus opportunism', *Organisational Science*, vol.7, iss.5, pp.477-501.

EPA. Case Study: making products better than new.

<http://www.epa.nsw.gov.au/resources/fujixerox1.pdf>. Accessed 1st of May 2005.

Fuji Xerox. http://www.fujixerox.com.au/environment/eco_manufacturing.jsp.

Accessed 2nd of May 2005.

Geraldo, F, 2000, 'From Garbage to Goods: Successfully Manufacturing Systems and Skills', Business Horizons, vol. 43, iss. 6, pp.55-65.

Grant, E.B. and Gregory, M.J., 1997, 'Tacit knowledge, the Life Cycle and International Manufacturing Transfer', Technology Analysis and Strategic Management, vol.19, iss.2, pp.149 – 161.

Guide, D.R.V and Wassenhove L.N.V., 2001, 'Managing product returns for remanufacturing' , Production and Operations Management, vol.10, iss. 2; pp. 142 – 156.

Giuntini, R, and Gaudette, K, 2003, 'Remanufacturing: The next great opportunity for boosting US productivity'. Business Horizons, pp.41-48.

Hakansson, H and I.Snehota, 1989, 'Collaborate with your competitors and win', Harvard Business Review, vol.67, iss.1, pp.133-148.

Hejduk, K.I, 2005, 'On the way to the future: The knowledge-based enterprise', Human Factors and Ergonomics in Manufacturing, vol.15, iss. 1, pp. 5

Ludan, S.M, 2002, Network knowledge in International Business, Edward Elgar Publishing Ltd, U.K.

Lund, R., 1998, 'Remanufacturing: An American resource,' Proceedings of the Fifth International Congress for Environmentally Conscious Design and Manufacturing, June 16 and 17, Rochester Institute of Technology, Rochester, NY.

Nasr, N., C. Hughson, E. Varel, And R. Bauer, 1998, "State-of-the-Art Assessment of Remanufacturing Technology, Journal of Industrial Ecology, vol.3, iss.1,pp.9-21.

O'Brien, C, 1999, 'Sustainable production – a new paradigm for a new millennium', International Journal of Production Economics, vol 60 – 61, pp.1-7.

Percy, S. 2000. Environmental Sustainability and Corporate Strategy: Why a Firm's "Chief Environmental Officer" Should Be Its CEO. Corporate Environmental Strategy, vol. 7, Iss. 2, p.195-202.

Polanyi, M, 1962, Personal Knowledge. Towards a Post – Critical Philosophy,
Routledge & Kegan, London.

Ron, AD J.de, 1998, ‘Sustainable production: The ultimate result of a continuous
improvement’, International Journal of Production Economics, vol 56-57, pp.
99-110.

Snehota, I, 1993, ‘Market as network and the nature of the market process’ in S.T.
Cavusgil and D. D. Sharma (eds). Advances in International Marketing:
Industrial Networks, vol.5, JAI Press, Greenwich / CT.