# Chapter 16
# Aquamate—Integrated Management for Water Supply Service

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## 16.1 Introduction

Servitization of manufacturing is promoted by the government of South Australia as a solution for small to medium enterprises in the region to adapt to the high cost environment in which they must operate (DMITRE 2012). The production and sale of goods alone has become unsustainable in the long term for many South Australian manufacturers as the barriers for entry are low and competition from low cost economies has driven prices down, reducing profitability. The high value of the Australian dollar, competition with overseas competitors in global supply chains, and the inevitable exit of the automotive industry in South Australia are also drivers for discovering new revenue streams in the provision of services.

The following case study of Aquamate, a South Australian manufacturer of poly-lined above ground water tanks, provides an example of successful servitisation within this context. The case study seeks to identify the triggers for servitisation and features of the transition process. The model of servitisation is compared with early examples found in the photocopier industry and classification of the resultant Product-Service System is applied to establish the success of the transition to servitisation.

The Aquamate story and the case study analysis demonstrate the importance of strategic planning, workforce skills in service provision and the ability to innovate, for companies aspiring to transform their business model toward servitisation.

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## 16.2 Overview

### *16.2.1 Company Background*

Aquamate is a privately-owned Australian company that has transformed from a manufacturer of rural products to an innovative service provider supplying to the oil and gas industry. The company houses two business units under one roof at Clovelly Park in South Australia. Aquamate designs, manufactures and installs environmental containment products including above ground water storage tanks. The company also manufactures flexible factory-fabricated geomembranes for supply with their proprietary products and direct to the end-user (e.g. pond liners for the resources industry). The company is small, with less than 20 employees. Head office operations and manufacturing are undertaken at Clovelly Park with a remote Field Services team sited in the field in the Cooper Basin. The two sites operate under an integrated quality, safety and environmental management system certified to ISO 9001, ISO 14001 and AS 4801.

Existing markets include onshore oil and gas, resources, municipal water, rural and commercial sectors. The rural market, both in Australia and overseas, is predominantly product supplied direct to the end user and through a network of dealerships. The resources sector is project work associated with product supply such as prefabricated pond liners for process water and construction of related infrastructure. More recently, the company has begun to design, manufacture and install turnkey above ground water storage solutions specifically tailored for hydraulic fracturing operations (e.g. multi volume systems that can be specified for the simultaneous storage of stimulation and flowback fluid, as well as for utilisation during drilling).

Aquamate originally began as a service provider, repairing leaking concrete water tanks. In 1986, the company established facilities in Adelaide, South Australia, to manufacture and install poly lined steel water tanks for domestic and export markets. The company has expanded and developed this product range and continues to supply to the rural market both in Australia and overseas. Services complementary to these products, such as installation, maintenance and repairs are provided through independent contractors associated with the company.

Aquamate is the South Australian agent for a range of Layfield products, including geomembranes marketed in Australia as GeoFlex™ and EnviroLiner®. The company established a dedicated facility in Dry Creek, South Australia for fabrication and welding of geomembranes. In addition to supplying tank liners and dam liners for the rural sector, the company began taking on projects designing and supplying factory-fabricated geomembrane pond liners and other products for the resources sector both in Australia and overseas.

In 2011, Aquamate sought to enter the oil and gas industry. The company delivered its first 1 ML tank to a major Australian oil and gas exploration and production company in 2012. The success of this and subsequent projects led to the company's transition in 2013 from a manufacturer of products to a service provider offering innovative solutions with a whole systems approach.

### *16.2.2 Product Features*

Aquamate differentiates from competitor products through the use of engineered materials rather than commodities. High Density Polyethylene (HDPE) is a rigid material traditionally used for dam linings. Due to its rigidity, HDPE cannot be folded and is transferred on to a roll straight from the manufacturing line, and deployed directly from the roll on-site. Therefore, the liner must be fabricated and welded in the field. The liners produced by Aquamate are flexible enough to be prefabricated into large panels, accordion folded, rolled onto a core and delivered to site with minimal fabrication done in the field. The tank design is also flat-packed and able to be delivered to the site by standard road transport. This has allowed the company to take a traditional field-based fabrication business and turned it into a factory-based fabrication business, reducing the time required on-site for installation and reducing overall costs and associated workplace health and safety risks.

1. The Aquamate Maxi Tank

The Aquamate Maxi Tank (Fig. 16.1) range is intended for rural, domestic, commercial and industrial applications of large volume water storage solutions. The Maxi Tank features a galvanised steel structure and cladding, with a minimum zinc coating of 450 g/m$^2$, as opposed to popular Zinc/Aluminium coated products, which have a 150 g/m$^2$ coating. The thinner alloyed coating is intended for shed cladding and other applications with high exposure to air to allow the coating to form stable oxide films. When a tank is full, the liner is pressed up against the tank wall, trapping condensation and excluding oxygen. The company has created a competitive advantage by sourcing galvanised steel in a range of coloured coatings as an exclusive product from its steel supplier.

The Maxi Tank liner is fabricated from GeoFlex™, a highly flexible material with characteristics suitable for water tank applications, not least its compliance with Australian standards for use in contact with drinking water. The company promotes the toughness of the material (similar to materials used for car bumpers), the flexibility (able to stretch 700 % before breaking) and fatigue resistance (Aquamate 2014).

**Fig. 16.1** Above ground water storage tank supplied to the rural market

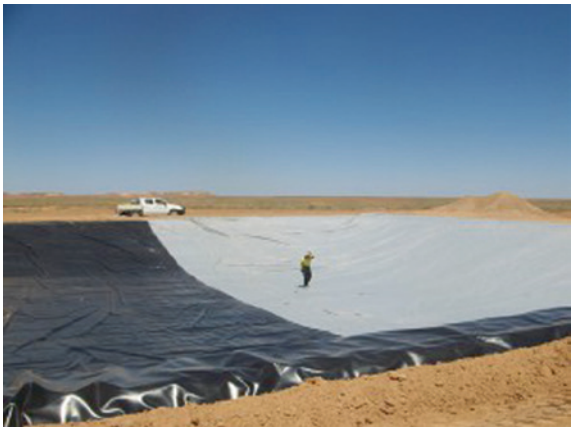

**Fig. 16.2** Factory fabricated geomembrane liners for conventional 'turkey nest' dams and pond linings

2. Upstream Water Containment

Aquamate have created two product-service offerings for upstream water containment for the Mining and Energy industries. These products are supplied on a project basis and include manufacturing, fabrication and installation of product. Aquamate supplies **factory-fabricated geomembrane liners** (Fig. 16.2) for conventional upstream water containment applications. Liners are fabricated from Layfield's EnviroLiner® geomembrane, which has been specifically developed for the containment of drilling fluids and water used in hydraulic fracturing operations (Layfield 2014). EnviroLiner® is heavily fortified with a proprietary UV package and is marketed as the most durable thin gauge geomembrane available for exposed service applications.

3. Relocatable Above Ground Water Storage

Relocatable above ground water storage systems (Fig. 16.3) are supplied with geomembrane liners with chemical resistance properties capable of storing a wide range of contaminated liquids to varying concentrations. Individual units can have a capacity up to 10 ML and the Canadian tank design requires no footings and minimal remediation at end of use. Product features include its 'bolt-together' structure, which can be disassembled and reassembled at multiple locations. Liners are considered single-use and must be replaced each time the tank is relocated.

Competitors in this sector generally come from an energy or construction background and source geomembranes from external suppliers, their strengths lie in large project management and experience dealing with large companies. Aquamate are currently the only vertically integrated tank manufacturer and the company heritage in supplying to the South Australian rural sector has created a culture of 'zero leaks'. Water is a precious commodity in South Australia as the region has very low rainfall and any loss of water is significant. Although Australian standards include an allowable leakage rate, Aquamate maintains its 'zero leak' standard.

**Fig. 16.3** Relocatable above ground water storage tank

Aquamate rely heavily on key suppliers to provide much of the technology and product improvements emerging from the North American shale gas market however the company has leveraged this competitive advantage and continued to develop their products specifically for Australian conditions. For example, the flat pack tank design is from Canada and is engineered for prevailing winds in Alberta or West Texas (up to 80 km/h) but wind gusts in the desert regions of Australia are greater. Aquamate has developed a tank wall structure capable of withstanding 160 km/h wind gusts.

### *16.2.3 Traditional Service Offerings*

Traditionally, Aquamate has provided services to the rural market in tank installation, repairs and maintenance. Over time, the company has rationalized its product offering in this sector and outsourced services to approved contractors. Sales are generated through local agents/dealerships and Aquamate provides product training and technical support for contractors and agents.

1. Tank Installation

The scope of tank installation services for standard rural tanks is clearly defined with responsibilities for the end user and the contractor. The product is flat packed onto a pallet and delivered direct to the site. Specific instructions for site preparation are provided to the end user to facilitate installation. Installation can be completed within one day and includes the construction of the galvanized steel frame and panels, preparation of the tank bottom with clean sand fill, laying of the poly lining and attaching the roof. After sales support is provided through agents or direct to end users and the company conducts investigations into product nonconformity through its warranty process. The company also uses social media to seek feedback and testimonials from end users after installation.

2. Design and Installation of Custom or Large-Scale Products

Aquamate offers services in design and installation for larger projects, and customized product, for both the rural/export and resources/energy sectors. These services are usually competitive-bid projects and may have smaller margins however the company views project work as an opportunity for active problem solving and employee engagement in the product development process. Project work is product-focused and the company is now more selective in the projects it bids for and limits the customization of standard tanks for the rural sector.

A typical project could involve the installation of custom tanks or dam liners in remote locations in Australia or overseas. Customization could include size, materials used, fixtures and other accessories, including the development of additional features such as remote and/or human interface control systems for analyzing water quality and detecting available capacity. Aquamate manages and oversees all aspects of the project and skilled labor is sourced in-house or from a pool of preferred contractors. As with standard product, Aquamate provides after-sales support and a manufacturer's warranty. Additional services such as repairs or planned maintenance may be provided however this has not previously been associated with a service agreement or on-going contract.

Project work also includes delivering one-off bulk quantities of product but this is no longer seen as sustainable as there is a very low entry barrier for other suppliers. Large product orders provide short-term boosts to revenue however they also draw limited resources away from research and development activities.

## 16.3 Triggers for Servitisation

Although there were always some services offered to its customers, Aquamate's primary business was still predominantly focused on manufacturing and selling products. The company's transition to servitisation was triggered by a combination of strategic planning, chance and employee initiative. Strategic planning provided the conditions and competencies required for the company to swiftly realize an opportunity discovered by chance by an employee. The opportunity presented as a conventional project in a new market but the company was able to develop a service model that complemented the customer's operational processes and budget constraints. The relationship between the combined triggers is illustrated in Fig. 16.4.

### *16.3.1 Strategic Planning*

Aquamate began investigating opportunities in the energy sector when their principal suppliers in Canada suggested that the shale gas market in Australia may follow the Northern American market, which was booming. The Company undertook

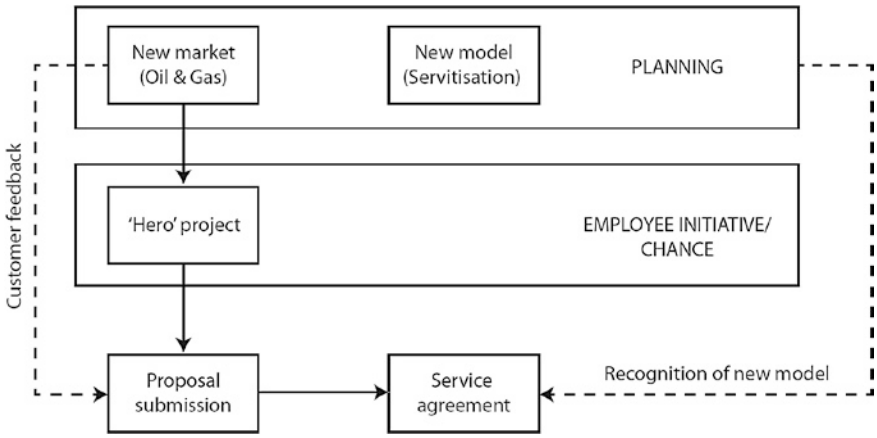


**Fig. 16.4** Relationship between combined triggers for servitization

a strategic planning session with an external consultant to review existing markets and potential markets and to identify those markets that should be pursued, or grown, and those that should be exited in the long-term. Each market was evaluated against a selection criteria including perceived value to the customer and achievable margins. Emerging from this process, the company began to view its business in three categories, or product areas:

- *Service*—The company defines its Service product area as ongoing income received from services provided, this includes a product portion however this is only when product is directly linked to the service offering i.e. no service = no product.
- *Project*—Project work is defined as Bid and Win revenue and must arise from the company's core competencies and not have a negative impact on the Service business.
- *Product*—Sales of standard product range with little to no customization i.e. dealer sales, export sales, etc.

Three target markets were identified and aligned with the three product areas, see Table 16.1.

The export/rural market focuses mainly on Products with some project work for customer requirements that fall outside of the standard product range. The action plan for Products set a target to achieve continuous productivity improvement by 5 % per annum. The oil and gas industry was identified as a target market for Service product offerings. The company aimed to consolidate existing business (project work) and transition to servitisation through new product/service offerings. The construction/water utilities segment focuses on Projects and the action plan for this segment focused on winning projects by tender to demonstrate capability and establish the company's profile in this sector.

**Table 16.1** Market segments and product areas for strategic development

| Market segments | Product area |
|---|---|
| Rural/Export/Other | Products |
| Oil and Gas | Services |
| Construction/Water utilities | Projects |

The company also made an overarching commitment to develop the culture of the organization to promote innovation, develop servitisation competencies, and to focus on product offerings that have ongoing requirements related to the core activities of the customer's business, i.e. ongoing service requirements.

### *16.3.2 Employee Initiative*

Aquamate began supplying pond linings to the Mining and Energy sector through conventional project work. The company was aware of the potential for relocatable above ground water storage for hydraulic fracture activities in the gas fields but needed a 'hero' job as a vehicle for niche product development and demonstration of product performance. The hero job was expected to be project-based product-related services (e.g. design, manufacturing, installation, etc.) of a large scale above ground water tank.

An early lead arose unexpectedly from a personal connection of an Aquamate employee. The Aquamate employee was playing golf with an employee of a service provider for a major Australian oil and gas exploration and production (OGEP) company and his friend, a direct employee of that company. The direct employee of the OGEP company mentioned that their current practice of digging 'turkey nests' (i.e. pushing the earth up to create four walls and installing a plastic lining) did not ensure conformance with environmental regulatory requirements as the lining was too thin and easily torn out, with high leakage rates. The turkey nests also required intensive remediation to fill in the pit at end of use. Other environmental issues arose due to the soil disturbance, requiring an excavation permit following a survey by local indigenous elders for important artifacts or remains. The process was lengthy and expensive (up to 3 months) and they had not yet found a solution. Aquamate developed an unsolicited proposal to the OGEP company offering to install an above ground million-liter tank to any location and, if it leaked more than 10 L, the company would move out at no cost to its client. Although this represented a risk to Aquamate, top management were confident in their product. They had established during their strategic review that zero leakage represented value to the oil and gas industry and they were well-equipped, with 30 years experience in the drought ridden rural sector, to deliver reliable water storage.

At first, the OGEP Company rejected the cost structure proposed by Aquamate. The cost to manufacture, transport and install a tank was high and needed to be amortized across each fracture/drill for the project to be viable. Aquamate submitted another proposal within these terms and included a product guarantee for

two years and four installations. However, the OGEP Company responded with a proposal for a straight rental agreement including repairs and maintenance, and Aquamate recognized the opportunity to move to a lease model.

## 16.4 Servitization Model

Aquamate's transition to servitisation bears similarities to the transition of the early photocopier industry, characterized by a lease model and the transference of product ownership from the customer to the service provider. In the early 1950s, 'razor and razor blade' business models dominated the photocopying industry. This business model included 'product-related' services to support the operational performance of an installed base (Visintin 2014). Key features of product-related services are the sale of the product at a lower margin, i.e. keep the product price low to expand the installed base (products in use), and create a rich aftermarket in expensive consumables, spare parts and repair services (Tukker 2004). In 1959, Xerox (then Halion) released the Xerox 915 photocopier, an innovative "dry copy" machine that was more productive, produced higher quality reproductions, with no risk of damage to the original document. The company owned the patent for the technology but struggled to find a path to market due to the costs of manufacturing. The Xerox 915 cost $2000 per unit to manufacture compared with competitor costs of approximately $300 per unit. The solution was a lease agreement offered at $95 per month including all servicing, spare parts and 2000 copies. Additional copies were charged at 4c per copy and contract cancellation was allowed with only 15 days notice. Compared with the capital expenditure and high running costs of existing photocopiers (e.g. paper price 15c per sheet), the Xerox lease agreement offering was affordable for a larger number of customers. Xerox entered the market at the low end and quickly moved up (Visintin 2014).

The product-service offering originally proposed by Aquamate (commonly described by the company as the 'ink jet printer' model), closely resembles the 'razor and razor blade' business model of early servitisation in the photocopier industry. Similar to Xerox, the high cost of the tank structure represented a barrier for Aquamate's entry into the market. Aquamate proposed to include the tank structure at cost, amortized across each installation. The company would then manufacture, install and maintain the geomembrane liners as a 'consumable' for each installation (four over two years). Services provided include transportation of the flat pack kit and installation. Relocation of the tank and installation, removal and recycling of the liner at end of each use, could be characterized as an aftermarket service with service fees charged at agreed daily rates plus materials under contractual agreements for a fixed term. By moving to a lease agreement for the tank structure and including a complete maintenance service, similar to the Xerox model, Aquamate has eliminated the barrier of high capital expenditure and aligned the company's revenue stream and human resource deployment with the customer's operational budget and technical needs.

### *16.4.1 Strategies for Transitions to Servitisation*

It's difficult to move from a manufacturer of rural products to an innovator in the oil and gas industry overnight. The change management process has been supported well by the planning and preparation undertaken prior to finding the 'hero job' and commencing the first service agreement. Focus areas identified during strategic planning proved to be critical to the success of the transition, that is:

- Development of innovative solutions for problems important to the customer
- Skills development in service provision versus manufacturing/installation
- Strategic investment in servitization

1. Culture of Innovation

Aquamate has established a culture of innovation and demonstrated continual improvement within its existing markets. However, the company quickly discovered that it is difficult to know what a new customer in a different market values and the customer may not always be aware of their own needs. Innovation management is not formally structured, but the company demonstrates organizational competencies associated with models of radical innovation management, e.g. discovery of ideas inside and outside the organization, incubation of ideas to business proposal and acceleration of early leads into qualified customers and predictable sales (O'Connor and DeMartino 2006).

The management team meets fortnightly to participate in business improvement planning. While all employees are encouraged to put forward ideas, the team prioritizes and focuses on each project, one at a time. Everyone has a role to play in the improvement of processes and product development and the company is investing in attracting highly skilled people.

The company has resolved to always have a customer engaged in any product development and undertakes long-term research projects to make a case to customers for product improvements. The criterion for selecting development projects is that if it doesn't solve a problem for the customer, it will not add value. For example, the company developed an interface whereby the customer can analyse water quality (e.g. detect contaminants and levels of minerals etc.) and see results in real time via satellite. When this product feature was made available to the target customer, the customer was not interested. Instead, they merely needed a simple GPS monitor to identify whether the tank was full or empty and its location.

The company is in the process of developing a new style of tank specifically for the extreme conditions encountered in the oil and gas fields. Existing tanks have been supplied to meet requirements as specified by the customer. However, as a service provider, the company has acquired a more intimate knowledge of the requirements in the field and can develop a product to better suit those requirements. The current tank design is not intended for 'run-dry' applications. This means that the tanks must have a minimum level of water to prevent desert winds from getting up under the frame and blowing the liner out. The costs of transporting water to maintain these levels are not sustainable. By identifying the

customer's need for a run-dry system, the company has developed a short-term solution, and is now seeking a long-term solution inherent in the product design.

The company sees its ability to innovate as a point of difference in response to the customer's perception of water management as an external or fringe business activity. Although some customers may not wish to invest directly in innovative water management, they value suppliers that are leaders in the field and can provide them with an advantage.

2. Skills Development in Service versus Manufacturing/Installation

The strategic planning process highlighted the need to acquire skills in service provision rather than manufacturing and this deficiency became evident early in the first term of the service agreement. The company realized that while they enjoyed an excellent relationship with their client's management based in Adelaide, their team on site in the Cooper Basin lacked the skills and experience to provide a quality service. Cultural issues arose due to a general ignorance of the oil and gas industry. The Aquamate employees working in the Cooper Basin were not familiar with the common language used by workers in the field, safe work procedures and customary work hours etc. The customer's representatives on the ground at the site were losing faith in Aquamate's ability to work with them. Aquamate appointed two ex-employees of Halliburton with at least five years oil field experience. These foremen did not have experience with geomembranes or tank construction but they were experienced in providing services and had established relationships with the customer and its employees in the field.

The acquisition of the skills required through strategic appointment of experienced people from the target sector has had reciprocal benefits for Aquamate. Existing markets (e.g. farmers) did not value the safety precautions required by oil and gas customers and therefore safety had not been a feature of Aquamate's traditional service offerings. The acquired knowledge of safety and environmental requirements of the oil and gas sector has raised the standard across the whole company, while Aquamate's own culture of quality and innovation has changed the expectations of the customer and created a barrier for competitors in the market. The appointment of employees familiar with the target sector also provided valuable information about resources, e.g. plant, equipment and employees, best suited for work in remote and extreme conditions.

3. Strategic Investment

Aquamate has made a strategic investment in the transition from manufacturing to service provision, focusing on innovation and skills acquisition, as described above. Investment in innovation capability is a long-term strategy for the company. This is not only to enhance service provision with problem-solving but also to create value through intellectual property, and the company regularly consults with a patent attorney to develop and protect its intellectual property assets. Since bringing the two manufacturing operations together, the company has established a 150 $m^2$ facility and acquired specialized measuring and monitoring equipment specifically for product research and development.

The greatest investment, however, has been made in human resources. A civil engineer has been appointed for large-scale projects, to complement the company's mechanical engineering capabilities, and a new role has been created in manufacturing to free up the Field Services Manager (previously managing production of geomembranes) to participate in product development. As mentioned earlier, the company has head-hunted key personnel to establish a dedicated service team embedded in the Cooper Basin and has supported the development of a 'local' culture better suited to the conditions and customer requirements for work. The investment in acquisition of skills through recruitment rather than training and/or experience immediately overcame the company's deficiencies in service provision and simultaneously secured networks within the industry through existing personal relationships.

### *16.4.2 Outcomes of Servitization*

By fostering culture of innovation, developing service aptitude, and investing in human and technical resources for service delivery, Aquamate has made a strategic commitment to transform itself into a capable service and solution provider. Evidence of the successful transition to servitisation is inherent in the development of a recognizable, saleable service, the generation of direct revenue streams from service provision, and the establishment of dedicated human resources for service provision (Dachs et al. 2013).

1. Recognisable Product-Service System

The transition from a 'razor and razor blade' product-related service model to a lease agreement represents a shift in the product and service integration of Aquamate's Product-Service System (PSS). PSS is defined as "a marketable set of products and services capable of jointly fulfilling a user's need. The product/service ratio in this set can vary, either in terms of function fulfilment or economic value" (Goedkoop et al. via Mont 2002).

In Aquamate's case, the PSS is characterized by the company's commitment to focus on product-service offerings that have ongoing requirements related to the core activities of the customer's business. For the OGEP Company, this could be described as ongoing water storage management for hydraulic fracturing operations. The product-service integration, or product/service ratio, of a PSS is variable and can be classified into three categories, i.e. product-oriented, use-oriented, and result-oriented. The level of servitisation can be described as increasing when a PSS transitions from product-oriented to use- and/or result-oriented (Table 16.2).

Aquamate's early service offerings in the rural market could be categorized as 'product-oriented' in that they are transactional services provided to support the product, which is sold to the customer, e.g. transportation, installation, repairs, spare parts and the delivery of consumables. The customer pays for these services every time they are used (Gaiardelli et al. 2014).

**Table 16.2** Main types and characteristics of dimension "PS offering orientation" (Gaiardelli et al. 2014)

| PS offering orientation | | Characteristics | | |
|---|---|---|---|---|
| Types | | Product owner | Product user | Product decision maker |
| 1 | Product-oriented | Customer | Customer | Customer |
| 2 | Use-oriented | PS provider | Customer | Customer |
| 3 | Result-oriented | PS provider | PS provider | Customer |
| | | | Customer | PS provider |

The lease arrangement represents a leap from a 'product oriented' PSS to 'use-oriented' where the customer is the product user and decision maker, but the service provider owns the product. Similar to the Xerox example, services required to enhance product performance are included in the lease agreement and interactions with the customer are more relationship-based. Risks associated with the product have shifted to Aquamate and charges are based on usage, i.e. the term of the lease and consumables.

2. Direct Revenue Stream

The company reports revenue streams under its defined categories or product areas: Service, Projects and Products. In 2012, the company did not derive any income from its Service category. By 2014, the company attributed AUD4.1 m to its activities in this area. During this time revenue derived from Product sales remained steady with a small increase, and income derived from Projects fell marginally. The fall in Project income may be attributed to the transfer of existing projects to a Service model and the company's strategic decision to rationalize project work and focus on quality service provision.

As a percentage of overall revenue, however, Services are now the dominant income stream and the main source of growth for the company. As shown in Table. 16.3, over the past three years the service revenue stream has grown from literally none in existence to around 55 % of Aquamate's total business income in 2014. Such a change is directly correlated with the sharp fall in the proportion of the Products and Projects revenue streams. Again, this is a clear indication of the transition of business model from product-centric to service-centric.

3. Dedicated Human Resources

A dedicated Field Services team has been established and is stationed on the customer's site in the Cooper Basin. Aquamate employees are embedded in the customer's water management operations and are perceived as an extension to the customer's own resources on site. The early identification of the need for skills

**Table 16.3** Percentage of overall revenue derived from each product category since servitization

| Business category | 2012 (%) | 2013 (%) | 2014 (%) |
|---|---|---|---|
| Service | 0 | 10 | 55 |
| Project | 27 | 23 | 7 |
| Product | 73 | 68 | 39 |

and experience in service provision was a catalyst for establishing a specialist team and the company has encouraged the development of an independent culture better suited to the context of the service delivery.

### *16.4.3 Benefits and Challenges*

The benefits to Aquamate in adopting servitisation are both tangible and intangible. Since the servitisation of its product offering to the oil and gas industry, the company has doubled its turnover in two years and expects continued growth through expansion of services in the Cooper Basin and replication in other sectors. The direct revenue from the Service category now represents over 50 % of turnover.

Moreover, direct contact with the customer and observations of the product in service provide opportunities for identifying and solving problems. Understanding the context and conditions under which the product is actually used provides insights not usually available to the manufacturer. This has led to product improvements and broadened the range of complementary services supplied.

Another less tangible benefit is the change in the customer's perception of Aquamate as a solution provider rather than product supplier. Aquamate regularly provide information, resources and advice to the customer and these incidental interactions lead to greater trust and collaboration between the two parties, and provide greater opportunity for innovation. For example, Aquamate was approached to design a solution for spill bounding for fuel farms based on the above ground environmental containment principles of the water storage tanks. The problem was that trucks entering and leaving the fuel farms would need to raise and lower the bund walls. The Aquamate management team took twenty minutes of brainstorming to create a unique solution. The client requested that the product be supplied under a rental agreement similar to the water storage tanks. Six weeks later, Aquamate began delivering a whole new service and have attracted interest from other operators interstate. It is predicted that this product will be bigger (in terms of sales) than all of Aquamate's other products.

Possibly the greatest challenge for Aquamate will be the rapid growth of demand from within the mining and energy sector and the corresponding growth of the company. The success of the PSS and the increasing need for reliable environmental containment solutions in this sector will also attract competitors seeking to challenge Aquamate's early adoption of servitisation. The company takes a philosophical approach to this dilemma and intends to adhere to its planned strategy. The purpose of securing a hero job and developing a relationship with the customer was to provide a vehicle for niche product development and demonstrate product performance. The company intends to continually improve and strengthen its position through product innovation and relationship building and then leverage their acquired experience to replicate in other regions and other market sectors (e.g. Water utilities).

## 16.5 Summary

The Aquamate case study provides an example of the successful transition of a small manufacturer, offering complementary services to support its products in the field, to a service provider supporting its customer's core business activities. The trigger for servitisation was a combination of strategic planning, employee initiative, and the ability to identify and capture emerging opportunities. The transition to a lease model was facilitated by the company's commitment to the culture of innovation, the acquisition of skilled personnel, and the strategic investment and preparation in the pursuit of servitisation.

The servitization model developed by Aquamate resembles the early Xerox lease agreement, which transferred the ownership of the product to the service provider and intensified the relationship between the company and the end-user. Although the business transition was started only two years ago, the company has already experienced the benefits of servitization including a new revenue stream, access to valuable product development opportunities, and an improved customer perception of its capability.

As demonstrated by this case study, servitization is a transformation that requires an organization's behavior and business structure to be adapted to and aligned with servitization strategies and processes. Aquamate's current service business model resembles a lease-based use-oriented PSS. Since the company retains the product ownership and the payment is amortized, some of the asset management issues, such as depreciation calculation, return of investment (ROI) and other financial risks need to be analyzed in the future to ensure the sustainability of the servitized business.

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