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INCREASING ORGANIZATIONAL VALUE THROUGH AFTERMARKET SERVICES

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Master of Science in Integrated Supply Chain Management

By

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Abstract

This seminar research paper will focus on the value of implementing a robust aftermarket services (AMS) program, as well as the unique challenges that setting up such a program can present. While applicable to other areas the focus of this paper will be centered on primary and secondary physical goods manufacturing operations from the perspective of a business to business relationship. Aftermarket services provide a valuable revenue stream that can make a significant contribution to the organization's bottom line. Many organizations confuse aftermarket services with performing warranty repairs on products they have built, in contrast, the spectrum of aftermarket services extends well beyond these simple repairs. The research and conclusions drawn throughout this paper will provide distinct differentiation and highlight the untapped potential that aftermarket services can bring, rounding out the organization's value proposition.

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INCREASING ORGANIZATIONAL VALUE THROUGH AFTERMARKET SERVICES

Andrew J. Warwick

Under the Supervision of Professor Mary Bartling

Introduction

Statement of the Problem

Many manufacturing organizations have a slumbering giant hiding in plain sight waiting to be unleashed. The colossus of aftermarket services (AMS) can be harnessed to generate substantial value through margin heavy commerce. Throughout the course of this research it will become apparent that aftermarket services are a unique and critical compliment to an organization's value stream. As with most things worth doing, the time and effort to implement AMS and cultivate a service culture can prove financially rewarding. There are several challenges that will beset those wishing to wake the AMS goliath; investigating the current situation/landscape, gaining support for change, change management, implementation, and sustaining the momentum are all critical to the endeavor. Not giving all of these elements the proper consideration and/or support can deter or halt efforts to instill AMS in an organization.

Developing, implementing, promoting, and executing aftermarket service programs have become crucial since the economic downturn of the past decade and have been a consideration since long before. Advantageously, organizations should choose to develop their AMS platforms prior to having to make hard choices based on economic uncertainly or declining front line sales. Unfortunately, it is often in the difficult times that executives see the light. "In hard times, companies tend to search for resources in areas they overlook" such as aftermarket opportunities

(Malone, 2004, p.1). However, leveraging aftermarket opportunities as a supplementary revenue stream is a much more palatable choice over cutting staffing and closing facilities. “Given the industry’s engrained pessimism, manufacturers worldwide have increasingly looked beyond traditional product portfolios to improve their top lines and profitability” (Cognizant, 2014, p.4). These organizations have often times chosen to reclaim, refurbish, and in general extend the life of existing products to bolster their incomes. This choice can be both an offensive and defensive benefit providing both bottom line revenue and preventing competitors from market expansion and/or entry.

While aftermarket services may sound like organizational bliss, it isn’t that simple to implement AMS, in fact it’s downright backbreaking work. The organization must be prepared for both significant financial investment and cultural transformation for any AMS initiatives to be successful. There are two broad strokes that aftermarket challenges come in, operational process challenges and cultural acceptance. It does not often go well to dip one’s toe in the waters of aftermarket service; jumping off the cliff into the abyss is required.

The organization has hard choices to make when it comes to determining what flavors to choose from the buffet of AMS. Offerings like repair, upgrade, and refurbishment are simple while component harvesting, warranty redemption, and spares fulfillment are complex and require substantial organizational knowledge and commitment to implement. No matter what offerings are chosen there is a significant investment in capable staffing, systems, and equipment that will need to be made. “In most cases, [these services] should be done in a specially designed returns center rather than a distribution” or manufacturing facility (Malone, 2004, p.1). Often time customers are nervous of AMS operations run from manufacturing or operations-based sites

because the mindset is truly that different in terms of operational requirements and philosophies, thus entire new infrastructure may need to be set up to engage serious customers.

It's been said that you can do anything with time and money, but the buy in needed for sustained success can't be purchased, it must be earned. There is a significant cultural shift that needs to take place from the top down to ensure AMS is nurtured and grown in a successful fashion. In the past returns have been seen as mistakes. After all, "who wants to draw attention to the screw-ups and incorrect decisions that returns represent" (Malone, 2004, p.1). That mindset needs to change into focusing on opportunities for excellence and revenue generation. "Returning goods into the supply chain is equally important as moving goods to market, so assigning key executives to centralize, manage and improve the asset-recovery program is fundamental to achieving profitable results" (Moore, 2005, p.7). This shift needs to come from the top and executives must wave the AMS flag or their subordinates will continue to treat the service division as burdensome not brethren. With all this said the needs of the customer must underpin everything; ensuring that value is being created for the customer will make or break the organization's efforts.

Purpose of the Study

The primary purpose of this research is to encourage organizations to explore the vast and impactful opportunities that exist in the aftermarket service market. The manufacturing world is shifting, markets are both shrinking, expanding, and changing at an ever-increasing pace. "In recent years, input prices have fallen and growth in emerging markets has slowed, decreasing new-equipment sales in industries ranging from oil and gas to agriculture to commercial

aerospace" (Ambadipudi et al., 2107, p.1). Providing value for customers is no longer isolated to front line sales figures and new shipment statistics. Customers and manufacturing organizations have come to realize they cannot live on sales alone and margin heavy supplementary offerings like AMS fit right into the new world. Many customers are now interested in engaging with organizations as full supply chain partners with offerings from design to decomposition and everything in between. In order to meet these requirements aftermarket services are required, not optional.

It is the ignorance of the importance that aftermarket operations can provide to customers and the manufacturing organizations that this paper seeks to eradicate. Organizations must drive out the complacency that binds them to past ways and come to terms with their customer's true requirements. Many customers want world class end-to-end supply chain partners capable of providing one stop shopping. I have seen first-hand the loss of business that can occur when organizations choose not to treat their business as a holistic offering and instead prioritize new production over end-to-end partnership. This all too often results in either loss of the business altogether or fragmentation of the opportunity that could have been landed. This research will provide sound footing for the justification of implementing an aftermarket services program to close the supply chain loop and secure customers looking for all-inclusive offerings.

Significance of the Study

The significance of this research focuses on revenue generation through customer service excellence in the form of aftermarket services. "An opportunity to generate additional revenue, differentiate market position, and support original product demand is sitting right in front of many companies" in the form of AMS (Moore, 2005, p.1). These offerings will result in

increased revenue through the services themselves as well as additional opportunities through supply chain partnership. Opening doors that otherwise would have been shut is one of the key tenants of aftermarket service. Generating customer satisfaction from multi-faceted, difficult, and dynamic opportunities allows AMS to provide foundational value for the organization and its customers. “The appeal of this strategy is simple: services provide stable revenue—and often higher margins—than sales of new equipment” (Ambadipudi et al., 2107, p.1).

At their core aftermarket services are about creating value were none exists, seeing through what is, to what could be, and turning that vision into a reality. This foresight and the subsequent execution are value added services that command a premium. “Average earnings-before-interest-and-taxes (EBIT) margin for aftermarket services [are commonly] 25 percent, compared to 10 percent for new equipment” (Ambadipudi et al., 2107, p.1). While sales are valuable in their own right, services sustain and feed the company off margin.

The sheer breadth and scope of the offerings that are categorized as aftermarket services will be a focus in both specific attention and as an undercurrent throughout the paper. A mere portion of these services can encompass; “maintenance, upgrades and retrofits, remanufacturing, end-of-life asset recovery and hazardous material disposal” (Burnson, 2006, p.2). In many instances a sheer lack of education of what AMS is and what it is not convolutes the discussions held in all too many organizations. It is the intent of this research to draw the lines, delineating what AMS offers. Not every service is right for every company and being educated on what these services entail is the first step in having a conversation regarding what the company could and should offer their partners.

A section of this research will be devoted to the design of products for service and environmentally conscious compatibility. Batteries and other hazardous waste disposal can be a significant source of concern for modern reverse logistics. These concerns are not optional and cannot be overlooked. Thus, designing the product from onset to minimize and accommodate for these needs provides a broad picture outlook that not only aids in the actual disposal but can be sold to customers as an offering. The same can be said for serviceability, as designing products that have a built-in extension to their life cycle is very appealing for customers and clients. A good example is computers that can have RAM and storage upgrades easily done by service centers or even the client themselves to extend the life of the product. This brings both spare parts sales and customer satisfaction, neither of which would exist if they were not built into the design of the product up front.

Assumptions

The most basic assumption that applies to this research is that corporations are profit seeking entities that seek greater return on investment (ROI). In correlation, the drive for profit must be constantly reassessed and revamped based on both internal and external forces that act upon the organization's ability to attain their goals. It is the duty of the organization and its leaders to find new, unique, and differentiating ways in which the organization can profit. Furthermore, it is assumed that that the readers themselves seek continuous improvement within their organization including the increase of profitability and customer satisfaction. It is also the assumption of this research that the audience has a proficient working knowledge of the modern business environment and that they understand business acumen beyond that of entry level

associates. Terminology associated with common business situations and processes will be referenced throughout the document given the assumed education and experience of the reader.

It is not necessary for the audience to have a prior detailed understanding of aftermarket services as the paper contains an overview and explanation of product life cycle, the reverse logistics chain, AMS offerings, the difference between AMS vs. warranty repair, and the corporation/customer/client relationship chain. The data and research presented will be universally representative of manufacturing environments and will not narrow in too specifically on a given market sector. Equally, the information presented will not be representative of service-based industries that do not produce tangible goods although some theories and processes may be universal.

Delimitation of the Study

Those organizations and executives that are complacent in their station need not concern themselves with AMS. Aftermarket services are for the bold; those willing to make hard choices and invest in the future. This research will not pander to those who are change adverse, but instead encourage those that have an open mind to increasing profit through significant organization transformation. Similarly, this research will focus more on the positive implications of implementing an AMS program over the complications and hardships that are associated. However, it will also not gloss over these adversities either.

There will be a limitation to technical jargon and specifications given the desire to inform, educate, and persuade based on theory, not tutor in the application of process or procedure. The purpose of this research is to empower those that have the constitution to take the

concepts discussed back to their organizations and implement them in a manner befitting their institute. There is no single solution to AMS but instead a unique application of process that is organization, market segment, and customer dependent. Given that universal nature of the positive impact of AMS there are not specific markets, regions, or customers that will be the center of attention but rather a broad-based spectrum.

Methodology

The primary method of approach for this project will consist of a secondary data analysis of research and statistics relevant to aftermarket services and the case for implementation of a service program. Data specific to AMS, reverse logistics, product lifecycle management, environmental awareness, and design for service will be presented from a wide variety of sources. Trade publications, whitepapers, case studies, academic sources, and additional research papers already in circulation will be leveraged for historical, statistical, and real-world examples related to implementing aftermarket services. This research will be reviewed and complied into a literature review and subsequently used to support the stance that organizations would be best served to follow the recommendations within this work based on the knowledge of their forebears.

Literature Review

Supporting the Product Life Cycle

While the bulk of the content that is incorporated into this paper is of contemporary perspective there is a foundational article written in 1965 that sets the stage for the case at hand in several ways. Theodore Levitt provides a scathing reproach of organizational leader's lack of strategical implementation of the product lifecycle. While not necessarily a new concept at the time, the product life cycle was not being leveraged for organizational differentiation at the time. Levitt (1965) articulates that "the product life cycle is today at about the stage that the Copernican view of the universe was 300 years ago: a lot of people knew about it, but hardly anybody seemed to use it in any effective or productive way". Aftermarket services play an integral role in the lifecycle of a product and the relationship between the organization and its

customer base. “Every product has a finite life” and “end-of-life- concerns have become increasingly important” (Ullman, 2010, p.13). It is important to note that AMS supports the entire product lifecycle including the design phase which will be covered in more detail later.

Levitt’s article goes on to provide a fairly in-depth outline of the product life cycle as depicted in Figure 1, providing a clear baseline of the stages; stage 1: market development, stage 2: market growth, stage 3: market maturity, stage 4 market decline. Another highlight of this commentary is the mention of both competitive pressure and profitability vs. sales, two concepts that are integral to the discussions regarding the viability of AMS. The focus here is on implementing an organizational plan based on lifecycle management vs. the understanding that these concepts merely exist. Levitt’s predominant argument is that understanding does not translate into profits, action does. Additionally, innovation and creativity will power the plans your organization sets forth far more than simply following the path laid out by others. The product life cycle and its impact on AMS will be explored in greater detail in the discussion section of this research.

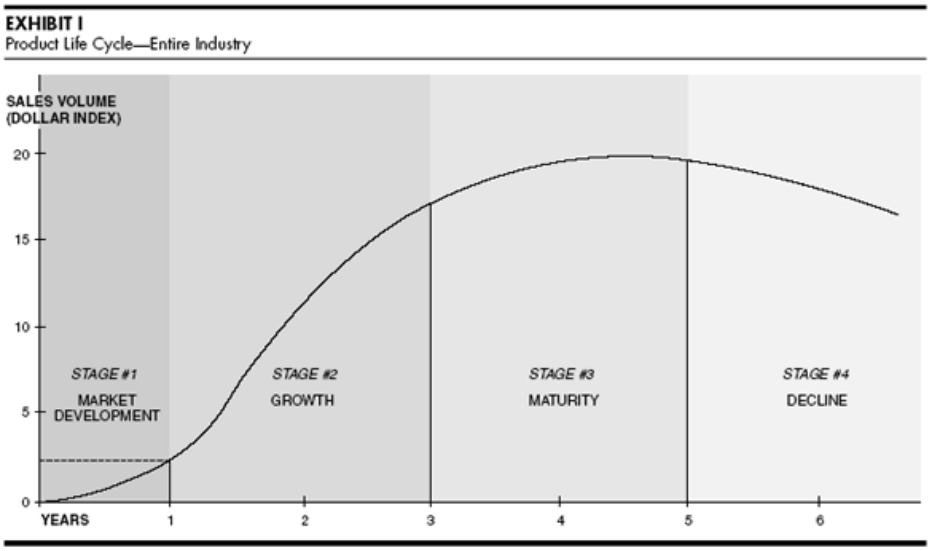

Figure 1 The Product Life Cycle (Levitt, 1965, p.1)

Customer Loyalty

Fast forwarding several decades with the groundwork of the product lifecycle set forth, the focus turns from the product to the customer relationship. Specifically, the customer's interaction with the organization's returns processing experience and the implications it has on the overall relationship. The articles that highlight this section are more consumer/commercial product focused but the foundational elements of customer service and connecting with one's audience are universal. Business to business (B2B) customers have different needs but how they want to be treated resonates the same as commercial customers. Elaborating on this, the content of this paper is more focused on B2B aftermarket services that support organizations than on the direct customer to client services. Think, Apple to Verizon instead of Verizon to the iPhone user. There are two key points that shine through across the literature that will be explored.

The first highlight is that if the organization treats their customers better than anyone else, they will remain loyal customers, even turning into brand advocates. On the opposite end of the spectrum "research shows that 85% of customers will not do business with a company if they cannot receive credit back for a returned item" in an easy and efficient manner (Harris Williams, 2016 & Co., p.6). It is apparent throughout the discussions that "a company's return policy can have a substantial impact on attracting and retaining customers" (Harris Williams & Co., 2016, p.5). At the most basic level offering, "an easy and transparent returns policy creates a high level of trust and comfort with shoppers" and forms the baseline for the interaction between customer and service agents (Haggerty, 2016, p.1). The returns policy is only part of the equation, but the key is setting a baseline that is customer centric. Additionally, generating empowerment on the part of the employees to provide exceptional service through consumer-friendly processes and procedures creates a connection between the company and the customer. This connection breeds

loyalty and trust, these two characteristics are critical to keeping happy customer so that they will continue to purchase from the organization. If done correctly this will "enhance relationships with consumers and supply chain partners" providing good will across the supply chain spectrum (Stock, J., Speh T., & Shear, H., 2002, p.1). It is important to note that the more efficient and effective the final relationship with the customer is the better all relationships can be up the chain based on better knowledge, more trust, and increased stability. Given that "it can cost five times as much to acquire new customers than to maintain business with existing customers, loyalty is critical to your brand's bottom line and long-term growth" (Haggerty, 2016, p.1).

This brings the discussion to the second major point regarding customer loyalty and relationship building. Keeping customers happy and devoted will increase their average spend thus raising overall sales and decreasing marketing efforts. Excellent service can create brand advocates that will tell others about their experience, this is the best advertising money can't buy. Word of mouth experiences from customers are the most powerful form of promotion and can't be bought or sold.

In their article *Many Happy (Product) Returns*, James Stock, Thomas Speh, and Herbert Shear share that "the *Wall Street Journal* recently reported that the value of products that U.S. consumers return to the nation's retailers each year exceeds $100 billion—or more than the GDP of two-thirds of the world's countries" and this goes all the way back to 2002. This can translate into major costs for an organization but also offers unique opportunities for customer service excellence. "A good returns-handling system can [not only] be a source of significant cost savings" but also "function as a profit center" (Stock, J., Speh T., & Shear, H., 2002, p.1). The bulk of this paper will articulate how aftermarket services can not only recover costs but turn

profits for the organizations they serve. James Stock, Thomas Speh, and Herbert Shear express this through “a fundamental shift in mind-set and a focus on three main objectives: give returns handling its own turf, treat returned goods as goods for sale, design efficient routes for returned products” (2002, p.1). While there is much more to the scope of AMS than these three objectives these are the foundational pieces of the puzzle. Ensuring policies and procedures are customer centric turning clients into brand advocates is foundational for AMS opportunities.

Profitability Through Service

Discussions of profitability and customer satisfaction transitions directly into the core focus of this research paper; adding organizational value through aftermarket services. It has long been held that supporting customers with exceptional service throughout the product lifecycle was the right thing to do. A study by the Aberdeen Group provides a picture of how organizations “are now able to understand the financial ramifications of their customer service strategies” supporting these long-held values (Sumair, 2013, p.2).

Formalizing, tracking, and investing in the right strategies is a major part of building and growing a service organization. This starts with having the correct outlook regarding AMS, “in a recent [2013] survey of 138 service organizations, 58% highlighted that they treated service as a profit center with profit and loss objectives in place” (Sumair, 2013, p.2). Profit centers are often treated differently than cost centers with significantly more strategic attention and investment. Executives take notice of business units that are making significant margin.

As previously indicated, it is much cheaper to retain customers than to seek new ones; in the same study mentioned above “fifty-one percent (51%) of respondents indicate that the cost of service and customer retention is lower than the cost of customer acquisition” (Sumair, 2013, p.2). “Companies that examine aftermarket lifetime value closely may find that certain services, including core offerings, contribute more to the bottom line than expected” (Ambadipudi et al., 2017, p.1). This means it is advantageous for organizations to invest in aftermarket services to provide strong customer relationships to support continued front line sales. With that said the services themselves are also money makers, “on average, organizations claim that the margins on service are 10.7% higher” than new sales of comparable goods” and at times can be much higher (Sumair, 2013, p.2). With all this said the organization must perform these services well; “organizations that were able to return a greater than 90% level of customer satisfaction saw significant advantages in customer retention, loyalty, and overall revenue growth compared to those with satisfaction levels of less than 50%” (Sumair, 2013, p.2).

While investment in AMS is the right and potentially profitable thing to do it is not easy, “manufacturers face formidable challenges in implementing aftermarket services strategies, both from within and outside the organization” (Cognizant, 2014, p.2). A few categories of challenges from the Cognizant study are identity crisis, product-centric culture, reactive mindset, limited service capabilities, making the correct investment decisions, and recognizing the correct customer needs. There are more challenges in addition to further articulation of the above that will be explored throughout the paper.

Many companies understand they need to provide support but “most companies either don’t know how or don’t care to provide after-sales services effectively” (Cohen, A.C., Agrawal,

N. & Agrawal, V., 2006, p.1). Furthermore, many organizations "perceive after-sales services to be a necessary evil" putting very little effort into supporting their customers (Cohen, A.C., Agrawal, N. & Agrawal, V., 2006, p.1). Organizations that perform services poorly can not only see higher costs but also risk brand damage. Having a poor service experience will drive customers away quickly impacting future sales and the organization's reputation. This can be the true value of organizations that understand aftermarket services and can sell them to companies that do not bolster both organizations and please the end customer. The bottom line is if the organization cannot provide world class service they must hire someone that can.

Design for Serviceability

Design for serviceability is an incredibly powerful mindset that will differentiate an organization's aftermarket services efforts increasing profit and customer satisfaction beyond competitors. As the world evolves customers expect that because they purchase, "more complex and expensive products, that their products can be used over a long period of time" (NPD, 2016, p.1). Starting at the end of the process can provide valuable insight into the product design that can save substantial capital. "Design for Serviceability / Maintainability begins with understanding the customer needs related to availability, reliability and service expectations" (NPD, 2016, p.1). This is a critical element as each product, customer base, and environment needs solutions tailored to the situation. A few of the different facets of the service and maintenance scope are depicted in Figure 2, more will be explored throughout the document. Deconstruction of each of these elements will provide input into the product and process design that otherwise would not be included making for a better overall solution.

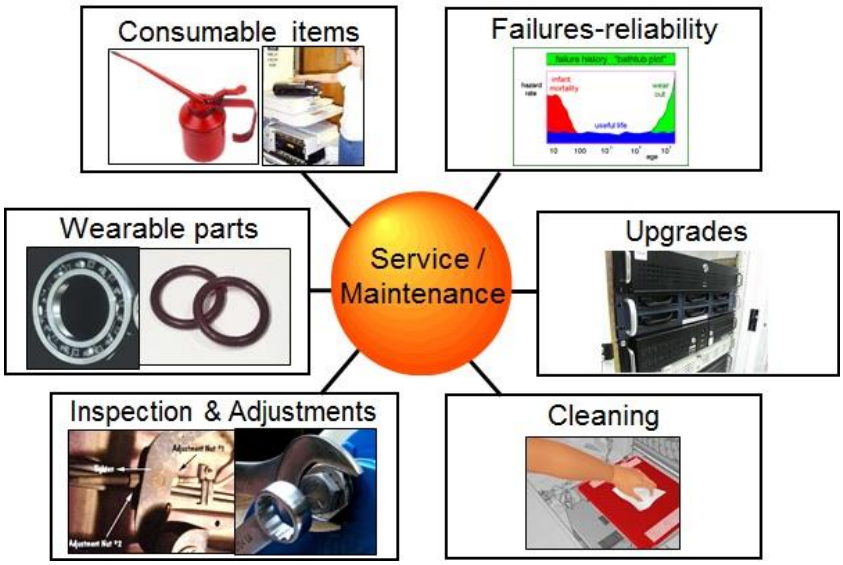

Figure 2 (NPD, 2016, p.1).

There are three key focuses that will be covered by the literature when discussing design for serviceability; simplification, standardization, and environmental friendliness. These elements all play a role in the design process in their own way while dictating the materials and processes used in the manufacturing of goods. Elements such as what glues or adhesives are used, soldering vs. screws, paints and coatings, modularity, and recyclability all can make a significant difference in both repair and decommissioning of devices as discussed in Dell's article *Design for Recyclability*.

"Standardization not only refers to parts used in the design but also to design approaches, service procedures and methods, and service tools" (NPD, 2016, p.1). Standard materials and components are paired with procedures that leverage jigs, fixtures, and calibrated tools to provide consistent, reliable, and repeatable processes. When focusing on servicing the product this provides a greater accessibility to replacement components, consistent repair methods, and less carrying cost for inventory.

Simplification pairs directly with standardization offering strong basic principles of design and production that help support aftermarket services. The more complex a product is the more difficult and costlier it is to repair. As outlined in the NPD article following these principles offer fewer components to diagnose, fail/wear out, disassemble/reassemble, and/or replace. Reducing both inventory and time for repair ultimately decreasing cost for the customer.

Environmental friendliness comes in many forms. Often, we think of the actual disposal and recycling of products, which is a factor, but it is much more as well. In order for this to happen upfront there must be a decision to "design for recyclability, thinking about a product's entire life cycle so that when it finally does reach the end of its life, it's easy to disassemble and process" (Dell, 2018, p.1). It doesn't stop at the actual disposal of the product though, as discussed earlier leveraging simplification and standardization provides the ability to upgrade or prolong the life of a product lessens the need for new materials and thus reduces the strain on the raw material pool.

Reverse Logistics

The term reverse logistics has different meaning to different authors across the many articles that comprise this portion of the review. Some authors use the term synonymously with the aftermarket services "closed loop approach to the supply chain that includes product returns, service contract returns, product recalls, used equipment and replacement parts for refurbishment, as well as reuse or sale as raw material" (Moore, 2005, p.1). Others highlight the upstream logistics "solutions to allow customers to return merchandise efficiently" (Harris Williams & Co., 2016, p.5). "According to the Council of Logistics Management, reverse

logistics is ‘used to refer to the role of logistics in recycling, waste disposal, and management of hazardous materials; a broader perspective includes, all issues relating to logistics activities to be carried out in source reduction, recycling, substitution, reuse of materials and disposal’” (De Brito, 2004 as cited in Farmer & Frayret, 2015, p.2). What these authors all seem to agree on is that “reverse logistics is usually left to chance or considered as an afterthought” by many organizations (Stock, 2001, p.1). True aftermarket service operations seek to make the reverse logistics process a priority instead of an afterthought.

While the content within the many articles on reverse logistics will be invaluable to the AMS discussions it’s the actual reverse logistics process itself that bears highlight here. The Harris Williams & Co. Reverse Logistics whitepaper provides an excellent overview of the reverse logistics chain and the value or lack thereof that can be seen at each point. “The complexity of the supply chain has continued to mushroom over the last 15 years” and it is important to clearly understand how this affects AMS (Harris Williams & Co., 2016, p.7). Not only is the supply chain complex but for reverse logistics it is dynamic and unpredictable. “One of the main challenges or reverse logistics lies in the uncertainty related to supply volume” (Farmer, J.G. & Frayret, J.M., 2015, p.3). Organizations must prioritize “unlocking additional value by using customer returns to identify trends and predict future customer behavior” this data analysis is critical for successful AMS operations (Harris Williams & Co., 2016, p.6).

Methodology

Procedures

Aftermarket services have played a central role in my scholastic career for the last decade. I have been researching AMS over the entire course of my matriculation at the University of Wisconsin Platteville ingraining the research into nearly all of my courses. With a clear vision I have focused my efforts in my undergraduate and graduate work towards this paper and the research it would require. I have leveraged the sources I have obtained over this period of time, curating the strongest and most applicable offerings into the culmination presented to the council here. These authors and their works provide a valuable clarity surrounding the case for the implementation of aftermarket services.

My scholastic and professional journey have taken a parallel course. I have held the roles of planner, program manager, analyst, systems manager, and planning, purchasing, and warehousing manager under the AMS umbrella. I have played a central role in the transformation of an organization from a basic service provider to one offering a full suite of AMS offerings. This involved determining the offerings to provide, the structure of the organization, P&L development, strategic location alignment, system selection, and deployment of the final solution.

It is the combination and intersection of scholastic and professional journey that provides the culmination presented here. I have used my personal knowledge of AMS to select and present the material included in the pages of this document with care and consideration. This is not a topic that I have chosen to complete a requirement but one that is near and dear to me.

Instrumentation

As a seminar research paper, the main instrumentation leveraged to create the paper were the published works of external sources. As previously mentioned, these sources are a carefully selected amalgamation that are leveraged against focal points supporting the overall thesis that AMS will provide significant organizational value. These sources are gleaned from the pages of trade publications, whitepapers, case studies, academic sources, and additional research papers.

Discussion

What are Aftermarket Services

The term aftermarket services covers a wide swath of customer facing offerings such as repair, refurbishment, upgrade, harvesting, warranty redemption, recycling and destruction, spares management, screening, parts fulfillment, parts sales, advanced exchange or loaner unit management, demo unit management, and screening among others depending on industry needs. These offerings provide a completion of the end-to-end value stream creating cradle to grave offerings for the organization to provide their customers, or as a stand-alone offering for new customers. These are “sticky” offerings that deeply ingrain the organization into their customer’s supply chain creating in roads and partnerships for service and new opportunities for engineering and sales. As previously alluded, the context of these service offerings is in a business to business fashion (B2B) not dealing with the customer’s customer or end client. “While some companies choose to provide aftermarket services in-house, many others find value in outsourcing to market specialists” (Teleplan, 2014, p.3). Often organizations have their own or separately outsourced call centers that provide direct client interaction to keep tight control over

this relationship. From this point forward, the customer is to be seen as the organization that is being provided services.

Aftermarket services are becoming an essential growth driving agent as the world becomes flatter, markets shrink, and customers become educated and empowered. Gone are the days of scraping returns as a loss or only performing simple repairs. Modern aftermarket services "may include the remanufacturing, refurbishing, recycling, reuse, or disposal of goods" on behalf of customers and clients located around the globe (Stock, Speh, & Shear, 2002, p.1). It is these activities that help to provide differentiation of service for organizations looking to leverage AMS for competitive advantage. Aftermarket services are not a necessary evil to be avoided, but instead to be embraced and leveraged as a revenue generator, retention mechanism, and defensive measure preventing competitors from poaching. AMS can generate value added services that provide a unique and tightly integrated revenue stream, enable a barrier to entry for competition, and can generate brand loyalty that the front-end sales office only dreams about.

It is important to distinguish AMS as a set of services that are provided by experts in the field vs. internal return processing by the manufacturing organization. While the original equipment manufacturer (OEM) likely does provide a set of services treating AMS as a revenue driver focuses on selling these services outside of the organization. This begs further distinction between the customer and client. The customer would be the contracted B2B agent for whom services are provided and the client is the end consumer who requires a specific service for the product. For example, McDonalds, the client, has purchased a soda dispenser from Coca-Cola, the customer and requires it to be repaired. In this example a third party AMS provider could retrieve the dispenser from McDonalds, send them a loaner or advanced exchange, repair the

unit, upgrade the dispenser to the latest revision, refurbish it, and ship it back to McDonalds in like new condition. In this equation the third party AMS provider does all the heavy lifting for Coke on behalf of the beverage company. “Steve Banker, a consultant at the ARC Advisory Group, offers another view on why many companies neglect reverse logistics—it's just too hard” (Malone, 2004, p.1). In the Coca-Cola example this type of service outsourcing allows Coke to focus on their core competencies and protect their brand identity by hiring AMS professionals to serve their clients. Understanding organizational strengths and weakness is key to operational success, outsourcing AMS can be a foundational element of organizational strategy. This proactive brand identity protection can be critical to the reputation of an organization and “for many companies, brand protection is paramount” (Malone, 2004, p.1). Given the sensitivity and importance of brand capital in the modern environment trusting another organization with the name that has been built through blood, sweat, and tears is a perilous affair.

AMS Offerings

As articulated previously there is a wide array of service offerings under the AMS umbrella such as repair, refurbishment, upgrade, harvesting, warranty redemption, recycling and destruction, spares management, screening, parts fulfillment, parts sales, advanced exchange or loaner unit management, demo unit management, and screening. It is not the purpose of this assessment to deep dive into each one of these services, but a brief definition of the major offerings is warranted.

Repair

The repair of a unit to a useable state after a field failure is one of the most critical and basic offerings. The repair can be immediate for return of the same unit back to the customer within a specified turn-around-time (TAT) or to replenish buffer stock held either on site at the organization, a customer location, or at strategically placed global distribution centers for advanced exchange or loaner stock. This is a basic service that only requires that the service can be performed on a product produced by the organization or by competitors/outside vendors on behalf of the customer.

Refurbish

The refurbishment of a unit to return it to 'like new' condition and to specified revision level takes the cosmetic specifications of a return beyond the simple repair of the unit. Under a simple repair the main focus is the functionality of the product not necessarily the cosmetics. Often units sent in for repair are client owned and they do not wish to have them refurbished only repaired. Think if your laptop has stickers from the various towns you visited on its chassis and the processor fails. You wouldn’t want to pay to have the servicing organization take the chassis off and throw away your memories for no reason other than to adhere to a specification. Instead you would only want to pay for the repair. However, in one of the previous examples of a Coke dispenser being sent in from McDonald’s they do want any scuffs, dings, and dents to vanish, having a pristine machine returned to them. This is the difference between repair and refurbishment.

Advanced Exchange and Loaners

Advanced exchange and loaner programs see the proactive replacement of a unit in the field unit through a defined loan or replacement program usually under a specific service level with the customer. Harkening back to our computer example often you would have to wait for your specific computer to be repaired and sent back to you. However, your work laptop might have a contract with HP that provides an advanced replacement or loaner to use in place of your specific computer. In the case of an advanced exchange that is now your computer or in the case of a loaner you would send it back after your computer is repaired and returned to you. This provides a robust option that reduces down time and increases productivity. Often service levels such as silver, gold, and platinum detail the agreed upon time between the customer and client with some services providing replacement in mere hours.

Upgrade

Upgrades can be either reactionary or proactive and result in the modification of a unit to bring it from its current revision to a specified revision level. This can include both hardware and software modifications. In reactionary upgrades something has went wrong and a recall may have been triggered. Units are not in need of repair of random components but instead replacements of specific components with known potential defects. Proactive upgrades provide enhanced client value through the modernization of units that do not necessarily require it but will function better with the changes. Continuing with the laptop example think about upgrading the OS, replacing a hard drive that could fail, and/or adding RAM to make the computer run faster.

Parts Fulfilment

The delivery of service parts to a specified location for the use of the customer, client or service technician at the site of the product failure or upgrade is the core of parts fulfillment. This service is measured in down time and requires the organization to strategically position material in multiple global distribution centers. These distribution centers will ship spare parts on demand to the location at which they are required. This type of global inventory distribution requires significant planning and forecasting especially for the unpredictable demand of service requirements.

Aftermarket services vs. Warranty Repair

As mentioned previously it is critical that aftermarket services are treated as a stand-alone offering within the organization apart from warranty repair if the organization providing service also manufactures the product themselves or on behalf of the customer. It is important to differentiate value creating activities from warranty obligations. Warranty work is derived from production failures that the original manufacture will bear responsibility. As mentioned previously this may well be the same organization providing service but even so, this work should be segregated so that it is not counted against the AMS division on the profit and loss (P&L) sheet. All too often the work of manufacturing is incorrectly allocated to the service budget negatively impacting materials and resources. This brings down AMS profit margins and incorrectly allocates organizational spend providing a convoluted picture. From a customer facing picture they know no difference which can be good, but the dollars must align to the correct buckets internally.

Implementing Healthy Organizational Change

For change to take place there must be a stark realization that the current business environment needs to be altered or enhanced through significant change. In the case of supplementing the business with an aftermarket service program the organization must be all in or they should not enter the market. This is not to say they must offer every service in the AMS arsenal but those they choose to implement must be robust. It is important that sufficient time, money and personnel be assigned to reverse logistics tasks if a firm wishes to attain optimum efficiency and effectiveness of the process. Adding the responsibility to managers and employees with already full plates will only result in high costs, problems and delays. (Stock, 2001, p.1). As mentioned previously to execute AMS poorly is to cause potentially irreparable brand damage to the organization and/or their customers. This is not an undertaking for the faint of heart. Secondarily, there must be significant executive support.

Firms seeking to fully implement an aftermarket service program need to do so from the board room down. AMS professionals must be part of the leadership team and have the power to implement major shifts in focus. “Value-chain [leaders] must demonstrate three qualities: alignment with the business’s strategy for a target operating model; integration of business processes and information to underpin decision-making; and adaptability to partner with the business and deliver differentiated value” (Badeshia, 2015, p.17). Things will change “staff, teams and facilities may need to be moved, created or disbanded” and they will need to be “retrained to adapt to the new way of doing things” (Badeshia, 2015, p10). As the company grows and expands the right staff is required to support more advanced applications and processes.

There is no shortcut to success of this magnitude and hard choices will need to be made, many times these will not be the popular choices. Strong management with a clear vision and a major culture shift will be required to succeed. There is no easy answer here, the natural reaction of far too many people is, we've always done it that way why change? Management will need to stay the course and drag their teams along or replace them. In order to grow to a globally integrated operation with the proper processes, network chains, and infrastructure the staff needs to be fully engaged and empowered.

The Product Life Cycle

It is important to not isolate service offerings to the end of the product life cycle nor to ignore the needs of service at the end of the sales cycle. Aftermarket services truly support the entire product life cycle. With design for serviceability coming into play in the development stage, “When market maturity tapers off and consequently comes to an end, the product enters Stage 4—market decline” (Levitt, 1965, p.1) however, this does not necessarily signal the end of service. In many cases it means aftermarket offerings kick into full swing. When the product enters stage 2 and sees rapid growth aftermarket services provide repairs, replacements, and spares. In stage 3 as the product enters maturity AMS can provide upgrades and refurbishment as the product set iterates as well continued spares and repair support. Finally, in stage 4 maturity, AMS provides more extensive support for all of the previously mentioned services as well as delving into more creative and advanced options such as warranty redemption, harvesting, and screening. It is crucial to understand that AMS can provide significant supporting value across the entire life cycle in dynamic and robust ways, it is simply dependent on the customer’s needs and the organization’s ability to implement these solutions on the customer’s behalf.

Reverse Logistics vs. Aftermarket Services

Aftermarket services are sometimes referred to as reverse logistics; while the physical logistical chain is critical this is only part of the picture and often undersells the wide array of services provided under the AMS umbrella. Reverse logistics is focused on the processes and procedures related to the movement of material back up the supply chain from the end client. “Reverse logistics [has also been] defined as the processes of receiving returned components or products for the purpose of recapturing value or proper disposal” (Greve and Davis, 2010, p.4).

This movement stems from a number of different reasons such as excess product and/or redistribution of goods, waste and hazardous material disposal, and defective goods retrieval. It bears a further understanding of these forms of surplus in the supply chain.

The first form of surplus is excess product resulting from overproduction and/or the poor distribution of goods. “Returns can be caused by the actions of manufacturing through … over-production, and by marketing because of product misallocation, incorrect forecasts of demand and overly generous return allowances” (Stock, 2001, p.1). Even with all the extensive research done to predict demand and the marketing efforts applied to sell products sometimes supply simply exceeds the demand. This is further complicated by international sales and modern global distribution networks. Goods may be selling well in Madrid, but sales are lack luster at best in Tokyo. The customer needs a redistribution plan to transfer stock appropriately back up through the supply chain. Aftermarket network chains and partners can help with this movement of already deployed goods.

There is also a serious implication of value degradation well beyond the cost of the product itself as “products tend to remain longer in reverse channels than in forward channels, resulting in higher costs in inventory, transportation and warehousing, and decreased revenues because of product obsolescence and degradation” (Stock, 2001, p.1). This is a critical issue for smaller and inexperienced firms as they do not have a lack of foresight and resource to effectively plan for effective reverse logistics. Organizations must be properly prepared to not only sell but to retrieve their products and byproducts.

At times the retrieval of ancillary waste and hazardous material related to the product is also required through reverse logistics chains. This is especially poignant when dealing with medical byproduct. The improper disposal of waste can create environmental and health concerns that are in odds with organization values and even in violation of laws and regulations. Additionally, many Eastern European and South American nations have strict rules regarding imports, exports, and disposal/destruction regulations.

Finally, there are concerns regarding destruction of proprietary and exclusive products. A good example of this is the high fashion industry that must destroy old product lines rather than see them sold at a discount degrading brand value. It is less likely someone would pay $10,000 for a Rolex if they can get it for $500 a season removed or even later that same season. Controlled destruction provides supervised and documented disposal which helps these organizations maintain their brand integrity. It is critical for the customer to have a robust plan to deal with this type of disposal as it may not be available in the city or even country where the product is deployed. It is very often wise to outsource this management to a secondary party such as an AMS provider that is skilled in the processes and has a robust global network to rely upon.

The most relatable form of reverse logistics retrieval is when there are clients with defective goods that need service, exchange, or even loaner units. When clients have products fail in the field, they are left vulnerable and immediately in need of assistance. While there is a degree of foresight to failures and advanced replacement that can be forecasted most often products fail when the client needs them most. Getting a replacement or repaired item in that client's hands should be the top priority of the AMS provider. This is often very difficult on a global scale as it involves proper distribution of advanced replacement or loaner material, robust

return channels that can accommodate the often-strict customs regulations of Eastern Europe and South America, and a healthy dose of empathy and understanding for the client's situation. The return of products positioned globally can at times take weeks to months depending on the product. Companion service offerings like advanced exchange or loaners can provide swift relief where it is cost effective and applicable. If proactive replacement of the entire product is not a logical offering more finite offerings like spares management or parts sales can provide field techs the materials, they need to fix or implement short term preventative measures on site.

Whatever the reasons for the reclamation of the goods there is a value-added component or rather there should be. All too often the focus is on the costs associated with the breakdown in forward logistics over the potential that exists in the aftermarket. "According to estimates, reverse logistics (RL) costs in the U.S. are about $35 billion per year" or roughly "6 percent of sales" (Stock, 2001, p.1). Aftermarket services and reverse logistics are very tightly intertwined and often confused. Reverse logistics seeks to drive out the waste in the return process and enable aftermarket services to mine the gold hidden in the scrap pile. Aftermarket services are the processes the organization uses to generate value and customer satisfaction once the logistics chain has re-distributed the goods. It is the flawless execution of these activities that help to provide differentiation for organizations looking to leverage reverse logistics and aftermarket services for competitive advantage.

Reverse logistics and its associated services must provide the tool set to execute the recovery of fielded or improperly distributed products in a manner that maximizes recovery rates. There is hidden opportunity for the bold, "most published lists of "important" logistics attributes rate reverse logistics low" (Stock, 2001, p.1). As seen in Figure 3 from Harris

Williams, “a median retail return rate of 8%, over $375 billion of merchandise is returned on an annual basis” with some individual categories as high as 20%. (Harris Williams, 2016, p.1). It is also important to note that the returns stream is only a fraction of the AMS opportunity stream. Those organizations that are willing to put in the effort to install robust return networks have increased potential to capitalize on the ever-growing amount of waste and returns in the forward logistics chain.

(Harris Williams, 2016, p.1).

Given the importance of reverse logistics as a value stream enabler it is important to execute this often messy and erratic process as efficiently as possible. In some cases, defined and well-suited forward logistics routes can be leveraged to redistribute product, but in many instances, a unique and tailored approach to reverse routes needs to be developed. This is critical as ‘mishandled or completely misplaced returns affect the efficiency of any reverse logistics process, but also means that products could end up being a total loss for a company instead of an opportunity” for aftermarket value creation (Greve and Davis, 2010, p.4).

Summary, Conclusions, and Recommendations

Summarizing the Case for Change

There is a significant advantage for those organizations that can provide customers offerings spanning the entire value chain ranging from engineering to aftermarket services. Some customers will not even consider partnering with an organization that does not offer a one stop shop preventing those that do not offer aftermarket services engineering and manufacturing opportunities. Aftermarket service is a sticky business that creates inroads with customers that are very difficult to decouple. These services provide the opportunity for significant customer satisfaction, providing enhanced credibility for the organization in customer interactions helping to secure future opportunities.

There is a large opportunity funnel that exists for organizations that are able to execute global aftermarket services waiting for those that can rise to the challenge. The scope and breadth of the potential offerings is so varied that once an organization can prove they have the ability to execute simpler offerings they can expand their reach. There is an ingrained creativity to AMS opportunities that digs deep in to the heart of value generation and customer service excellence. Proper AMS programs are designed with the flexibility to provide value in even the most challenging situations, the more challenging the more money there is to be made.

This brings to close the final and ultimately most impactful facet of AMS opportunities; they provide a significant direct profit opportunity for the organization as well as supporting traditional revenue streams. These offerings have significant margins well above front line sales for many services. While sales are great, margins make money. The margins of aftermarket

service offerings can add significant bottom line value to the organization. The bottom line fiscal health of an organization is ultimately what concerns investors. Bolstering these figures with dynamic long-term engagements provides significant attraction for investors. The question is not can the organization afford to invest in aftermarket services, it is can they afford not to?

Closing

In closing the organization must take an in-depth look at their offerings, are they fooling themselves into thinking they offer aftermarket services when they are really only providing warranty support. Have they missed opportunities for service, sales, or engineering because of this delusional attitude? Are there opportunities they are passing up to increase margins and boost profitability? These are the tough questions that the organization needs to ask themselves and must honestly answer. AMS is not for every organization, there are those that should not even attempt the journey, but for those that are willing to put in the effort great things are on the horizon.

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