

STAPLE YOURSELF TO A PRODUCT

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INTRODUCTION

The 1992 Harvard Business Review article entitled "Staple Yourself to an Order" helped to illustrate the customer-centric impact of all processes from the time an order is placed, to fulfillment of the order. Every touch point of the order management process - touches the customer to some degree.

So, what does it mean when every touch point also has an impact on the near and/or long-term performance and profitability of your products and services?

This example is intended to illustrate various "product-centric" activities that affect a product or service's overall lifecycle cost, profitability, and ultimately - market success.

This presentation explores the benefits of incorporating transformational "product-centric" applications of cross-functional information and services into everyday activities across diverse business functions and roles - and not just in the context of a single application or module.

PRODUCT AND SERVICE OVERVIEW

ePODS' Personal Electric Vehicles (PEVs) are deployed by networked service providers in dense urban areas, large campuses and master-planned communities.

End consumers subscribe to the service for "on-demand transportation".



Images source: MIT Smart Cities project, and Intrago Mobility LLC

PRODUCT STRATEGY

Introducing the new X-3 from ePODS.

The product strategy is to improve profitability and foster new revenue streams to extend ePODS early market leadership and competitive position.

With widespread adoption, the X-3 could become a "product platform" that inspires and supports a broad ecosystem of complimentary products and services.

However, the X-3 is a complex product that could be subject to extremely variable conditions and in-market risks.

How can ePODS be so confident?



PRODUCT-CENTRIC ACTIVITIES

Product performance is impacted across the value chain - and consists of Linear, Recursive AND Concurrent Activities



Over the lifecycle of the X-3 product line - as well as the lifecycle of every individual X-3 vehicle - there are various activities and metrics that will continue to affect product performance all across the value chain.

From design-time decisions, all the way to disposal, the sum-total of activities and costs both direct and indirect will contribute to the X-3's success in the market - and continuously influence product improvement activities.

LOOKING BACK: FOR INFORMED DECISION-MAKING

Comprehensive product intelligence benefits all: ERP, Sales, Finance, Manufacturing, and Service Providers hold various pieces of the puzzle.



The predecessors to the X-3 and competitive products in the market provide information that ePODS product teams can mine to help them make more informed decisions.

In addition, the insights captured by Sales, Service Providers and Customers are documented in various systems and formats. This is typically a severe barrier.

At ePODS, this information has been service-enabled to facilitate easier aggregation and analysis.

While each function and role has a "workplace" of information that is applicable to their business, they are also to share or syndicate their analytics and views for the benefit of the broader product management community

LOOKING FORWARD: DESIGN DECISIONS = BUSINESS DECISIONS

Design & Engineering Decisions Impact Profitability/Performance, Mfg Efficiency, Quality, Compliance, Service Level, Brand Equity



Traditionally designers and engineers rely on their own experience, knowledge and intuition regarding product structure, raw material characteristics and general regulatory & compliance constraints.

Today, ePODS designers and engineers have better simulation and analysis tools to help make even more informed design decisions in the early stages of development - decisions that will have an impact on product performance, quality, service, and customer satisfaction impact long after the sale.

Therefore, early decision-support is required regarding materials selected, manufacturing facilities and processes, and specific design of how and when components should be disposed, recycled or re-furbished.

Design impact analysis supports a comprehensive value proposition to our customers, reduces exposure & risk, and enriches the brand & perception.

DESIGN-TIME DECISIONS FOR SUSTAINABLE DESIGN AND PRODUCTION

Transforming green business into good business. Companies with the ability to profitably design-for-sustainability will gain early advantage. AKA "eco-effectiveness" strategies.



A major challenge facing product designers is the growing demand to justify design decisions to meet new environmental guidelines.

Product companies that are able to provide green and environmental certification, AND deliver that at a similar first cost, or as part of a lifecycle-service plan will be the early leaders in this emerging market trend.

CO-INNOVATION PARTNERS

Co-Development & Intellectual Property. Value chain partners help to develop barriers to entry and competitive advantage.



Although many of the X-3 components are considered re-usable from other product lines, there are several new "breakthrough" new materials and manufacturing processes required to make the X-3 truly differentiated in the market and set a higher barrier to entry for the competitors.

Some of the exclusive components, materials and manufacturing processes and been jointly developed with our suppliers and co-manufacturers and resulted in several new patents.

Now that we have a go-forward for Product Launch, we can start the processes for sourcing and planning the manufacturing scale-up, promotional launch activities, and channel partner readiness!

SYNCHRONIZING GO TO MARKET

Smarter alliances and contracting. Reduce risk when including go-to-market partners earlier in the product-launch process.



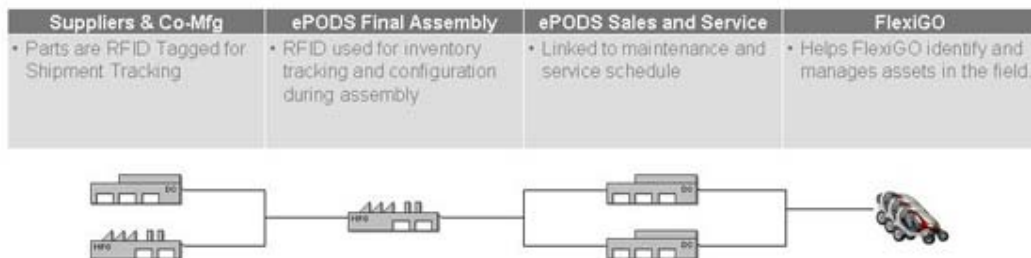
ePODS is further developing a network of reseller, and service-network partners in addition to FlexiGO.

In addition to being 'network connected' and 'network aware' to enhance the capabilities for joint service planning and logistics - partners are providing additional enhancements and premium service/maintenance option plans.

The ecosystem is gaining momentum - thanks to management's ability to articulate my lifecycle value and rapidly create or extend these new ecosystem partnerships as we go to market together.

TRACEABILITY, ACCURACY AND AUTHENTICITY

Internet of things. A clear unified view throughout the supply chain, improving accuracy, and securing authenticity.



Components and sub-assemblies of the X-3 are manufactured in various locations around the world, with final assembly occurring in regional distribution centers.

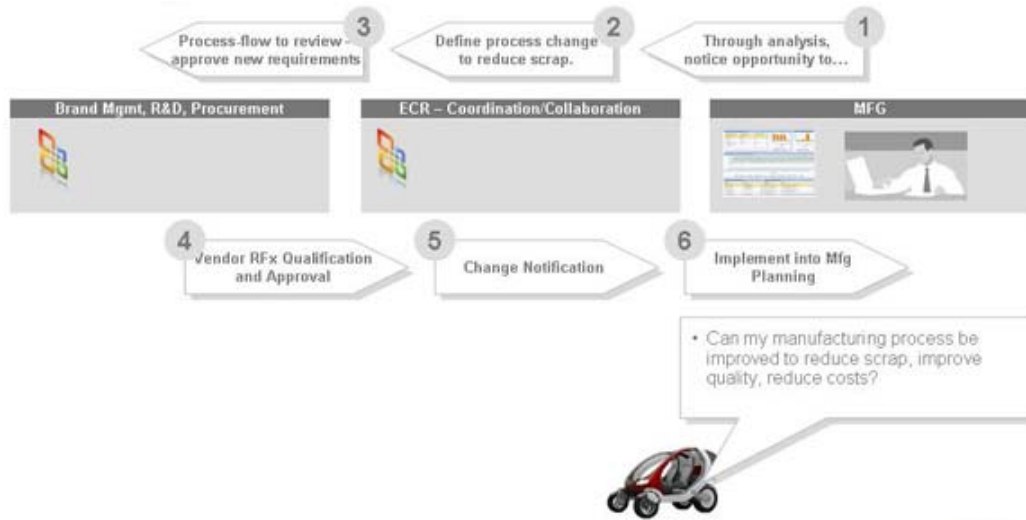
Our manufacturing sites receive inventory and shipment notifications from our various suppliers and co-manufacturers to assist in our advanced planning and scheduling.

Final assembly plants have even better visibility to WIP as it moves - thanks to RFID tagging that is read at each stage along the way. In addition to logistics tracking, the Auto-ID infrastructure helps to ensure that my parts are authentic and not tampered with.

At each point, the asset tracking tags and other technologies continue to help our planners and inventory managers run lean manufacturing operations.

MANUFACTURING IMPROVING THE BOTTOM LINE

Manufacturing is connected to Product Success. Managing quality, driving innovation / improvement and pro-active risk management.



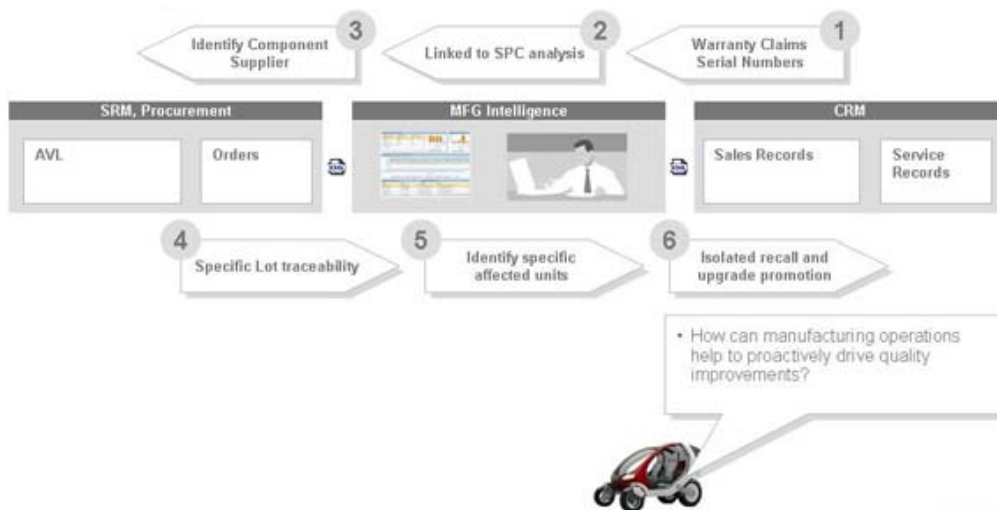
Through product-centric analytics, manufacturing provides PM with suggestion for configuration, vendor, or process change with improvements that also reduce costs.

Reflects well upon Manufacturing's KPI's as well as helping to improve the X-3's bottom line performance.

Manufacturing can drive product innovation

MANUFACTURING SAVES THE BRAND

Manufacturing is connected to Product Success. Managing quality, driving innovation / improvement and pro-active risk management.

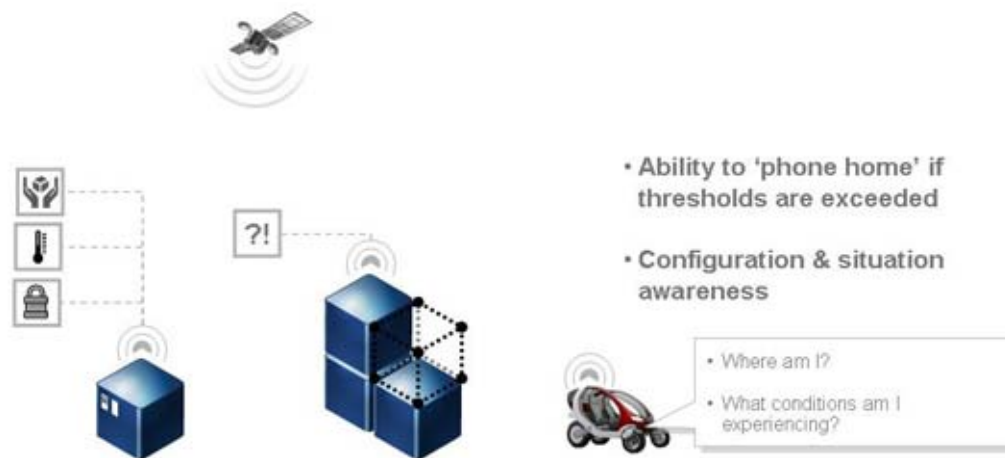


At one point, Manufacturing noticed an unusual spike in warranty claims. However, all of the products going out have testing fine, and the warranty claims do not seem at first to match with any specific production run, or time or date.

So, using a variety of services, manufacturing is able to quickly trace the source of the problem, and provide corrective action that may otherwise have created a disruptive, and UNNECESSARY recall!

ASSET PROTECTION

Smart Item networks track valuable assets. Sensor networks can provide additional status and contextual information.



Since the X-3 is a rather expensive product - and continues to be an ePODS asset to manage - it is important to track the usage, configuration, and context the assets are exposed to in the field.

For transporting, the X-3 crates are equipped with various sensors in addition to other Auto ID tagging that allows it to "phone home" if anything occurs out of normal range.

This is a major improvement to make sure that we catch any defects BEFORE the X-3 is delivered to the customer! (It also happens to make sure that everyone that touches me throughout the value chain can be help accountable for great performance or, well...)

Once the X-3 is in service with FlexiGO, sensors continue to monitor location and additional usage statistics and thresholds that are critical to FlexiGO's field operations.

MARKETING & SALES

Marketing and Sales in the loop. The ultimate consumer and producer of product-centric information.



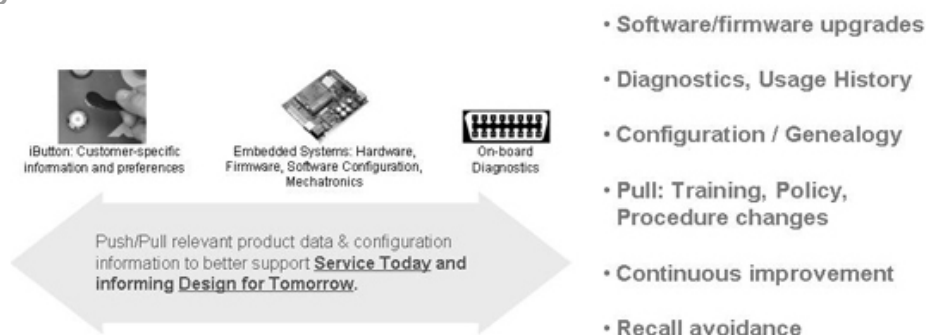
With even better information than ever about our existing customers' needs, as well as information about which markets we can compete and win, marketing and sales has created a roll-out for the X-3 that is very efficient.

The pricing and promotions strategy is carefully balanced to consider competitive, customer forecasts, and prior cost-to-serve analysis to determine proper, profitable incentives to our best partners.

Marketing and Sales have had visibility throughout and provided contributions to the X-3 development program all along.

SERVICE

Embedded systems and software add new capability to capture and relate real-world usage.



The X-3 has embedded systems to log usage and environmental variables (Product-embedded Information Devices PEID). This is incredibly helpful for field diagnostics - but also generates some wonderful information for my designers and product managers about how the X-3 is actually used and performs in the real world.

With this ability to store information, and then enable the company and partners to collect and aggregate his information in a useful way - we can be proactive again to prevent future defects - and therefore continuously improve performance and drive refinements for future models.

DISPOSAL

More than a promise, with audit trail and accurate disposal specs.



Composition
Per Vehicle Net Wt 844Lbs

Cadmium	20mg
Lead	15ppm
Chromium	.006kg
Mercury	.002ml

May contain: Other stuff that needs to be recycled.

service.epods.net

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- Access accurate/timely disposal compliance specs
- Composition : Configuration
- Traceability / Genealogy
- Linked Audit Trail / Service
- Valuation of EOL assets

End of the line - but not the parts and materials that make the X-3. Owners know exactly when and where X-3 components should be returned.

With that, there will be full accountability of where my various parts end up - many of which will be recycled into new products or disposed of safely.