Digital transformation is a term often used by rarely understood. While it’s not always clear how, the benefits of going digital are exemplified by the most innovative, competitive and valuable companies in the world. Until recently, being digital was limited to companies born online, the so called digitally-native. This has changed with the advent of the Internet of Things. The IoT platform, digitizes the products and services of physically-based companies so they can live online as software too, increasing customer value and acting as a direct link between customer and company. But why digitally transform with IoT at all? For the sole purpose of getting closer to the customer. This closeness results in a multitude of competitive advantages that increase value for both customers and shareholders alike.
Digitally-native companies are those who live online such as Amazon, Facebook and Google. One of the main reasons their shareholders enjoy the highest valuations is since digitally-native companies create value online and operate online, their business can be more readily measured and improved. The products (and services) they sell are delivered to their customers as bits assembled into software and company operations related to how their product is created, distributed and used is also represented as bits, which are assembled into different software.

Product software is directly linked to the company’s operational software and it is this high-bandwidth connection between product and company that is the digitally-native’s secret weapon.

Physically-native companies are the companies we consider traditional; those who live offline in the real world. They are product companies such as Panasonic, Ford and Kenmore and service companies such as Verizon, McDonalds and Harvard, who create value offline and predominantly operate offline too. The products (and services) they sell are delivered to their customers as atoms assembled into physical goods.

Company operations also occur in the physical world. Here there is an indirect link between product and company operations. This physical link may be described by software, but the connection is made through intermediaries – mostly human.

Besides online versus offline, it is the nature of the link between product and company that is the major differentiator between digitally-native companies and physically-native companies. The more robust or digital the link, the more value that can be created. Why? Customer visibility.

The digital link between product and company is a 24 hours a day, 7 days a week window into the customer’s world. It is through this link that digitally-native companies can see how customers use their products and why they use their products. The resulting data is profound and when used properly can provide insurmountable advantages over competition.

For example, consider the digital product Google Maps. Google captures data on how customers use their product and what they use it for. This data informs engineering on how to improve and extend the product and directs marketing and sales on how to communicate the product’s value and prioritizes what to sell to their merchant customers. Furthermore, it notifies support when the product is not working properly and directs repair, which is done online with software.

Now consider a Kenmore vacuum cleaner. This is a physical product that once sold, is on its own. The only post-sale connection Kenmore has with its products is if their customers provide data to get an extended warrantee or when they are contacted to do a repair. Data about their products make it to the company via product management through a physical, human-to-human link. And because gathering customer data offline is an onerous and time-consuming task, the amount of data collected is very limited and by nature, biased.
Digital transformation (DT) is all about data. While there are many convoluted definitions, the easiest way to think about DT is that it enables companies to use customer data to drive their business. It enables companies to get closer to their customers. Digital transformation is the process physically-based companies go through to establish a digital link between their customers and their company.

A data-driven company is more valuable because it uses the customer data it collects to improve revenue, customer satisfaction, and operations. Company revenue is increased by using the data to improve and invent products. Customer satisfaction is improved by producing better products and providing a better customer experience. And the data is used to make company operations more efficient and customer-centric.

It all starts with digitization. For digitally-native companies no transformation is needed since they already operate in the digital domain. But physically-based companies don’t so how do they get there? The answer is the Internet of Things. This is why IoT tech is about much more than just connectivity.

All physically-native companies, big and small, can transform into digital companies by using an IoT Platform to incorporate Internet of Things technology into their products and businesses. Leading the charge are the biggest companies of all.

Pressures exerted by their more digitally-native competitors have led virtually all Fortune 500 physically-based companies to undergo some form of digital transformation - transforming product lines to be online and digitally-native. Notable examples of companies using IoT as the basis of their digital transformation are GE, Schneider Electric and Samsung, the latter of which has committed to having all of its products connected to the Internet of Things by 2020.

This pressure to transform is not limited to the biggest. Timing is everything and it’s no different in digital transformation. The more digital a company, the more competitive it is; so the spoils of competitive advantages and barriers to entry go to the first movers in each market.
Digital transformation for physically-native companies is abstract because there’s nothing solid to anchor it to. There is IT-based digitization but that’s fragmented across multiple business systems (CRM, PLM, ERP, …) and incomplete because these systems don’t produce source data. Perhaps more importantly, basing company transformation on IT just isn’t that exciting, let alone motivating.

IoT-based digital transformation is different. It’s based on how companies makes money: selling physical products. For the physically-native company, that’s terra firma - the reason for everything else. And since it’s aligned with its culture, IoT-based digital transformation is both understandable and exciting enough to motivate employees to get behind it.

Central to both digital transformation and IoT is data. When applied properly, IoT tech collects source data from the physical world and converts it into useful information for the company.

Internal source data starts at the sensor. Converting that data into a digital payload and then wrapping it with protocols so it can be sent on the network is the work of the software agent that lives on the embedded system. This is the edge of the IoT network, from which the data payload is gathered and sent over the OT network to the IT network where it makes its way to the public cloud and then into a database where it waits to be processed by analytics or AI. This processing creates models that produce information that is stored in the company’s business systems. Different departments within the company access their business systems to use this information to streamline and improve.

This is the data that drives digital transformation and the process described above is performed by the IoT platform. This middleware, that enables the collection and conversion of digital transformation data, is also the digital link between product and company.

The IoT platform enables digital transformation by pulling data from the product and using it within the company. And if planned in advance, the data collected by the IoT product is not limited to product data; it can also capture data useful to the operations of each department in the company and the data needed for new business models that reduce monetization friction.
USEFUL INFORMATION

The most obvious sources of data to collect from the product is about the product itself. Its utility, usability and performance can be modeled and then compared with its actual use resulting in innovations that improve products and invent new ones.

But what else can be collected? What other data can the product collect that would be useful to the company?

Beyond engineering, each department can benefit from data:

<table>
<thead>
<tr>
<th>Department</th>
<th>Data Collection</th>
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</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>Understanding how the product is used and for what the product is used can inform changes in the manufacturing process.</td>
</tr>
<tr>
<td>Marketing</td>
<td>Both inbound and outbound marketing benefits from primary customer data - improving the product roadmap and product communications respectively.</td>
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<tr>
<td>Sales</td>
<td>Quantifying how the product is being used tells sales when there are opportunities to sell more products and product expendables.</td>
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<tr>
<td>Support</td>
<td>Developing models to predict when the product is working and when it's not makes service better for everyone.</td>
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<tr>
<td>Business Development</td>
<td>Knowing the product’s strengths and capabilities with respect to delivering customer outcomes indicates who should be partnered with, eventually leading to ecosystems.</td>
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<tr>
<td>HR</td>
<td>Understanding product deficiencies and feature priorities identifies the future roles that need to be hired.</td>
</tr>
<tr>
<td>Legal</td>
<td>Determining if the product is being used according to its terms of use and warrantee conditions minimizes risk.</td>
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</tbody>
</table>
BENEFITS OF BEING DIGITAL

For the physically-native company, IoT-led digital transformation leads to increased competitiveness, faster innovation, better efficiency, new business models and enhanced customer experiences. But ultimately the benefits of transforming to digital are all about getting closer to the customer and using that customer proximity to improve the way companies engineer, market, sell and support their customers. Having that closer vantage point results in tremendous competitive advantages.

Consider now the Kenmore vacuum cleaner and Google Maps. What if a vacuum cleaner could operate more like a digital mapping system? Not in what it does, but in how well it knows its user. This closer relationship makes for a better product and better vendor.

The resulting competitive advantages that come naturally to digitally-native companies are now attainable by all physically-native companies, big and small, who go digital by incorporating the Internet of Things within their products and companies.

Getting Started

It’s easy to get started to quickly and easily offer best-in-class IoT services and solutions. This is how you can get started:

• Schedule a ROI workshop with your Ayla team to identify areas of value that are available from connected device data in your market
• If you don’t have an Ayla sales team contact us right away at aylanetworks.com
• See a hands-on demo of the end-to-end Ayla platform including our AEP tools

Ayla Networks

Ayla Networks provides the industry’s first Agile IoT Platform, accelerating development, support, and ongoing enhancements of connected products for the Internet of Things.

Ayla’s software fabric runs across devices, cloud, and apps to create secure connectivity, data analytics, and feature-rich customer experiences. Offered as a cloud platform-as-a-service (PaaS), Ayla’s flexibility and modularity enables rapid changes to practically any type of device, cloud, and app environment.

www.aylanetworks.com