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RISE OF THE SENSORISED WORLD

From Products to ‘Connected Products’:
The next frontier for product companies and manufacturing organisations

Executive Summary

Driven by advances in Internet of Things (IoT) technology, products that were once made up of mechanical and electrical parts, have become complex systems that combine hardware, sensors, microprocessors, and software. From wearables to appliances and automobiles, these smart, 'connected products' are not just ushering in a whole new era of convenience and ease for consumers but also offer myriad opportunities for manufacturers in creating new customer experiences, opening up new revenue lines or even improved operations, and better asset utilisation.

There is however a misconception that connected products are the sole preserve of new-age, digital-native corporations and big tech companies. But that is not so. This paper looks at the promise that connected products hold even for established manufacturers and incumbent product companies, and how they can turn their traditional products into connected products & intelligent services, and thereby benefit from the IoT revolution.

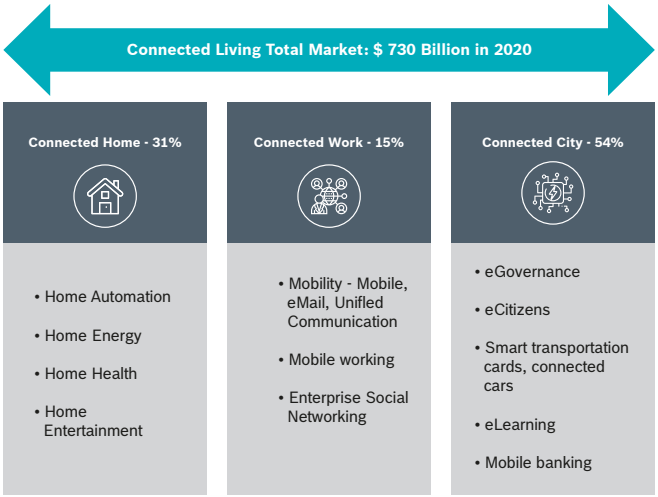
You Just Can't Ignore IoT: Connected Products are the Future

IoT technologies are today being compared to the steam engine of yore in being so disruptive as to have forever changed the way things were done. And at the heart of this new technological era is the 'connected product'. It's growth and all-pervasiveness show no signs of stopping, especially given the myriad opportunities that they offer – from creating connected customer experiences, coming up with new offerings, and delivering better, even predictive, maintenance services, to data-driven innovation and most importantly, enabling a shift from product sales to value services for increased profitability. Simply put, 'connected products' are the next stage of product evolution, and in this scenario only the fittest will survive.

The numbers speak for themselves. The number of connected 'things' worldwide is projected to grow to over 20 billion in 2020. By 2025, the financial impact of IoT is estimated to reach $11 trillion per year. For most traditional product companies that have not yet made the switch, now is a good time. The question is no longer 'if' they should make their products smart and connected, but 'when' they should start to do so. Already, early adopters are realising the advantages: 80% of organisations with IoT solutions have seen their revenue increase as a result. The average revenue jump was 15.6%, with some leaders in IoT implementation seeing increases as high as 64%. Further, Gartner predicts that by 2020, 10% of organisations will have a highly profitable business unit specifically for productising and commercialising their data.

Connected Products are Everywhere

There is hardly any segment or sector that connected products don't find a use in, and for the rare ones where they have not made in-roads into, it is just a matter of time. The size of just the connected living market for example (Fig.1) is estimated by Frost and Sullivan at $730 billion by next year itself, and it's one that is bound to grow exponentially with each progressing year, along with all the other markets – be it automotive & transportation, infrastructure, retail, health- care, or even smart cities.



Connected Products are for Everyone

As mentioned earlier, connected products are finding usage in every sphere of life and work, which is not surprising, because connected products make everything better – even industrial operations. Here are just some indicative areas where shifting to connected products can help traditional product manufacturers:

Effective Warranty Analysis: Products typically face warranty issues and the disagreement between company and consumer on the product usage that lead to its failure are not uncommon. But if the product were a 'connected product', there is ready data available – thanks to embedded smart sensors – on the sequence of events that led to the failure and this in turn ensures much quicker, better, and more effective warranty analysis. And because the data is objective, it forms the basis for action to be taken, avoiding, if not eliminating, disagreements if any, and more importantly, disgruntled customers.

Better Service Management: Be it a factory floor machine, a consumer product, or device, scheduled service calls are the norm, a highly inefficient method that costs the company time and money. If instead, the machine or the device were a connected product, the whole nature of service management changes, because predictive analysis comes into play. The machine or the device itself can send the consumer or service personnel a notification about its breakdown or impending failure. This just doesn't reduce or eliminate downtime, it also saves the company a lot of money in terms of cost of manpower and cost of maintenance. Not to mention, happy users.

Competitive Benchmarking: In the 'make, ship, sell' era of traditional products, there was no avenue to improve upon a product based on customer usage patterns. This is where connected products are a boon for better product engineering. Because with connected products, manufacturers can understand, manipulate, and improve an existing product or asset to a better version according to the usage of the current version by the consumer.

Making the Shift to Connected Products isn't as Easy as 1-2-3, but it can be

Transforming traditional products into connected products brings with it a host of challenges, with manufacturers hampered by lack of clarity and problems in identifying the right starting point for this transition. While there is no 'one-size-fits-all' strategy for companies looking to make the move to connected products, there are however certain questions that every manufacturer – irrespective of business area or industry – needs to ask and consider as part of the transformation journey:

Product Differentiation: Will a connected product make your current offerings more appealing?

Customer Value: What additional benefits can your customers receive if your traditional product becomes a connected product?

Usage of Product: How will your new, connected product be used and how can it enable a richer customer experience?

Data & Privacy: What is your data management plan and how do you address privacy concerns?

The Right Partner: Who would be the right partner in your transformation journey and is this partner capable of not just helping you build a connected product but also support the subsequent ecosystem?

The Right Partner can make all the Difference

While questions 1–4 are internal to the organisation and the answers to which every manufacturer must be clear about, it necessarily needn't follow that the manufacturer must answer them on its own. It may sound counter-intuitive, but if the answer to question #5 can be answered first, then not just answering the other questions can be done in collaboration with the partner but it would be a more effective strategy as the partner would be present with the manufacturer from the very beginning of the transformational journey.

A Contributor and an Orchestrator

The connected products ecosystem is chiefly made up of three parties:

User: The one who uses the products or the system.

Contributor: The one who contributes the components that make a product 'smart' such as sensors, parts, and the software platform.

Orchestrator: The one who runs the ecosystem

The ideal partner is one who can help manufacturers by being both a contributor and an orchestrator, as this will make the transition to connected products smooth because a single party is in charge of building and maintaining the manufacturer's connected products ecosystem.

But this partnership should also be consultative in nature with the partner having the capability to examine – right in the initial stages of the journey – a manufacturer's traditional products through a digital lens to help them solve existing business problems and increase business efficiencies.

Begin Your Connected Products Journey Today

Embarking on a connected products strategy is difficult, but as stated earlier, it can be a whole lot easier with the right partner who can deliver end-to-end solutions, such as Bosch. By combining our competence in the fields of software, sensors, and services and our experience & expertise in IoT, Bosch can help you with your transformation one step at a time – starting right from applying a digital lens to your existing product(s) to building a solid value proposition, and charting out a sustainable and profitable technology approach. That is why, for many global organisations across the world, transforming products into intelligent services begins with Bosch, a world leader in connected products.

A Smooth Journey all along the Value Chain, across Industries

As a Contributor and an Orchestrator, Bosch can help you not just with design and development of new revenue-generating opportunities but also quicker implementation of solutions with our proven expertise, that spans industries, sectors, and areas as well as across the value chain – from Product Design, R&D, Manufacturing, Logistics & Distribution, to Service & Maintenance. Some of the industries for whom we have built and managed a connected products ecosystem include Manufacturing (batteries, tyres, elevators, transformers, motors), Energy Management, Football Analytics, Condition Monitoring, Cold Storage Monitoring, Cities (Air Quality, Parking, Transport, Energy Management), Water Consumption & Quality Management, and more.

There's an old adage: the best time to plant a tree was 10 years ago, the second best time is today, and it is the same with Connected Products. For manufacturers looking to move from traditional products to connected products, now is the second-best time to get started. And a partner like Bosch can also help you make up for lost time with your connected products strategy.

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