CUSTOMER EXPERIENCE DISRUPTION IN MANUFACTURING INDUSTRY

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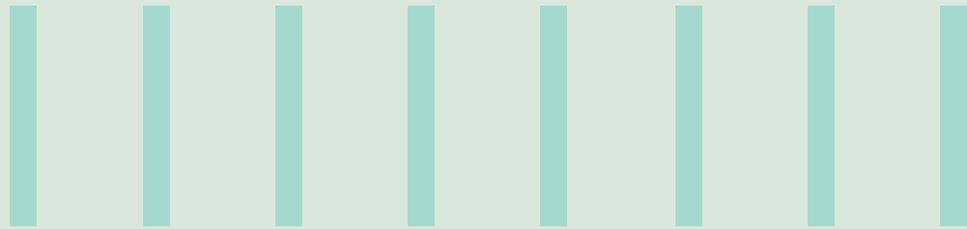
As per a report by McKinsey, the manufacturing industry is set to double itself to $64 trillion by 2030[1]. Manufacturing has always been the mainstay of any economy around the world. However, earlier, it was seen as a monolithic industry with various uncomplicated sub levels such as heavy, process, light & hi-tech, each having its own set of nuanced customer interaction necessities. These were easy to relate and aligned with the focus on what was sought to be achieved within the real boundaries of that industry. In this worldview, the actual customer was a part of the process but a fringe player at best, contributing to product innovation through controlled focus groups, surveys and purchasing choices, assuming there were choices.

However, the boundaries that defined so much of how industries interacted with their customers are breaking down and evolving into new ones with an ever-increasing pace. In addition, it is no longer easy to immediately comprehend the significant impact of these changes on growth opportunities and, on the flip side, survival itself.

As an example, connected and self-driven cars are now an entirely new form of interface between the end customer and the direct manufacturer. Many times powerful than anything that existed earlier, which was anyway tenuously operating through a layer of dealerships and after-sales market. No surprise that the new age car technology is coming from companies such as Tesla, Google, Apple and Baidu instead of core automotive players.

In this paper, we have identified four game changers that have already started to disrupt the manufacturing world and we will look at how these interact with each other to create opportunity for deeper customer experience.

Automation & IOT

These are no longer buzzwords and are much closer to us than we would have thought so. As per Gartner, by 2020 there will be 21 billion connected devices [2]. With such a massive volume of available information, the opportunities to make it count are immense.

An example, imagine you are manufacturer who make elevators. These machines require a good deal of after sales support to keep them running with minimal risk to humans & property. Let us suppose the motor of the elevator needs servicing but there are no apparent signs of it and the person in charge also does not see a problem with it. The problem is not so severe today, but could take a serious turn in the forthcoming days. After 3 days, the motor stops working and the elevator is closed for further usage. The person in charge then raises a complaint with the elevator vendor and based on their SLAs they rectify the elevator. Underlying important thing is the interim problem to the end user.

Imagine the same scenario but with a sensor in place to periodically check if the motor is working fine or not. On the slightest hint of a problem, an email/message is sent to the lift manufacturer and a case is opened in their customer service system automatically. The technician coordinates with the person in charge on the best time to rectify and corrects the problem. Actual down time to the end user: Potentially None!

This is a perfect example of spotting a problem before it leads to a breakdown. The average mid-market automobile today already has this capability. So do high-end printers that can order ink as they are running dry. On the human side, several large hospitals have put in place a remote patient monitoring systems to connect

pacemakers, wearable etc. to get the exact readings of critical parameters that could be sent to the practitioner through the mobile so that the doctor could alter the dosage accordingly at run time. Manual intervention: Zilch!

However, we feel this is only a small part of the story. The potential for Customer Experience disruption is monumental when we start to project where these technologies will logically move in the foreseeable future.

The amount of data generated during an hour run of a connected vehicle generates close to 25GB of data [3] almost equivalent to 160 hours of music streaming on the internet. The information collected from multiple sensors in the car could be leveraged to provide insights on vehicle's performance, safety, endurance etc. Most of this data is processed offline (remotely from the car). As we move towards self-driving automobiles, this data volume is projected to grow more than 140 times to 3.6 TB over the same duration of usage [4]. This will put more load on the infrastructure that is required to support this booming data transfer to and from the car. And this is why even the early self-drive technologies are in reality computers on wheels with massive compute capability built into the vehicle itself.

The same will apply to other technologies as well making each automated device more and more autonomous giving the power of self-diagnosis and possible self-repair onsite itself while not losing the 'connected' capability.

This will have ramifications on the after-sales organization, as we will see shortly. But the most immediate impact is already being seen in S.M.A.C.

Social, Mobile, Analytics & Cloud (SMAC):

We know that any company's operations could be greatly improved if the right technology is used at the right place where operations are streamlined, based on deep customer insights. SMAC is the perfect fit to cater to such scenarios.

Social media is a critical factor in making purchase decisions and as per Forbes "most customers—82%—conduct research online before purchasing a product" [5]. Therefore, the manufacturers have to remain on their toes to make sure that there is minimal negative criticism of their brand. Dell, headquartered in Austin, have a special social media monitoring team that keeps analyzing the trends on social media to tackle any untoward situation and takes evasive action immediately in case of negative comments, to prevent it from snowballing to a bigger issue and leading to tarnishing of their brand. When 43% of the planet is on social media, the organizations need to have a firm grasp on the way customers interact with them. Moreover, the direct and unobtrusive feedback received from the clients help the manufacturers to develop products that are more likely to attract the customers.

Mobility is not only paving way on the shop floors to reduce the production cycle times or streamline operations, but is also affecting the way the sales reps/partners sell the products with real time access to inventory so that they commit the exact delivery dates. Another way to delight the customer with timely deliveries and commitment. In a make to order industry, such as the aviation, mobility plays an important role in providing the best of customer service to its client as and when there is a problem in the aircraft. The routing of technicians or availability of replacement parts or proactive maintenance could be handled with ease using mobile devices to keep the aircraft stay in the air than spend servicing time in hangars.

Analytics on the connected device feed is moving towards predicting not whether, but when a device is going to fail in addition to remedial action needed to stop such an action from occurring. A connected vehicle with an inbuilt driving pattern telematics, allows for the accurate calculation of insurance premium in addition to a feedback into the way cars are designed for greater safety. How long before this analytics capability, moves to the device itself thereby providing such information

to the customer of the device at the same time as the manufacturer. Greater choice to change the usage behavior? Choice to scout for lower cost spares and services from niche nimble players?

With Cloud, manufacturers can concentrate on their core competencies rather than worrying on the underlying infrastructure. Gone are the days when the CAD designers used to sit in a super-secret location with no access to the outer world, so that the design could not be leaked. Today the drawing board has moved from concealed locations to the internet with the prevalent usage of SMAC technologies in one form or the other. Recently, BMW launched the "Urban Driving Experience Challenge" to crowd source ideas from across the globe to develop futuristic cars. The problem charter was to design cars in conjunction with BMW engineers to take care of futuristic challenges such as congestion, limited parking etc. The level of innovation & sophistication could not have been achieved with just a handful of engineers whilst the engineers worldwide helped BMW to achieve their task. Such is the power of technology.

Consolidation of Sales & After Sales

It used to be the case that manufacturers had completely disjointed sales and service department. Hence, once a product is sold, the customer had to find his/her way around the labyrinth of customer support. This has changed wherein sales and after sales are an integral part of a manufacturing organization's growth story. Both being revenue-earning streams, in fact to a point where service is the more profitable one that cross subsidizes the original sale itself.

One conglomerate in the US has already created a Data Lake to leverage the monitoring data from its install base of HVAC systems. Analysis of this data allows them to use it for additional services like proactive monitoring and maintenance and leveraging the same data to rate and show the performance of the buildings to Insurance companies and negotiate the cost of Insurance by giving ratings to customers. Apart from this the Data Lake conglomerate from multiple systems from different companies can be synced together to create future products.

Additionally, as we saw, the device service solution and analytics related to the same

is steadily moving to "the left", i.e. towards the device itself. Couple this with other innovations such as the 3D printer and now suddenly the after-sales of the manufacturer is cut out of the picture. Today, the customer in a remote area need not wait for a specific part to be delivered to get their critical equipment up and running. The customer is willing to pay a premium for that ability, but in the near future even that will not be required.

The cost of 3D printing will drop to an extent where it will become cheaper for any customer of any manufacturer to make everyday replacement parts in-house rather than enter into expensive replenishment contracts. NASA has already started printing components and tool prototypes in space using the 3D Printer onboard the International Space Station [6]. Soon, the wait for a replacement part could be hours or days instead of the many months it takes to ship from earth and that too at a fraction of the cost and risk.

The strain this will put on the business model of the sales and after-sales organizations of a manufacturer will be telling and the day is not far away.

Customer Centricity:

Manufacturing has come a long way from just focusing on lesser downtime & efficient production runs to a more customer centric scenario where the customer is in the driver's seat. Manufacturers are going around luring the customers to buy their products. From connected cars to 3D printing, the ultimate objective is to make the life of the end user simpler with better technology or simplified business processes.

Henry Ford once said, "Any customer can have a car painted any color that he wants so long as it is black." Gone are those days when the manufacturers made whatever they wanted and the end user had to buy out of compulsion due to lack of options. Nowadays, even if the consumer demands his/her car to be painted in "Drunk-Tank Pink" then there is little chance that the manufacturer will say no, otherwise they risk losing the customer.

To launch the new Fiesta, Ford gave artists the car for 24 hours and filmed their day. Ford then asked their Facebook followers what they would do with a new Ford Fiesta for 24 hours, and created personalized video combinations for users to view and share[7].

Customer Experience is one important aspect and no one wants to miss the bandwagon, if they have to stay afloat in the competitive market.
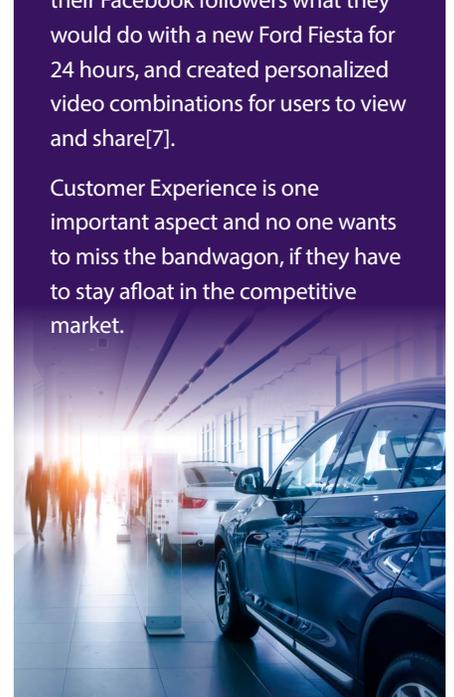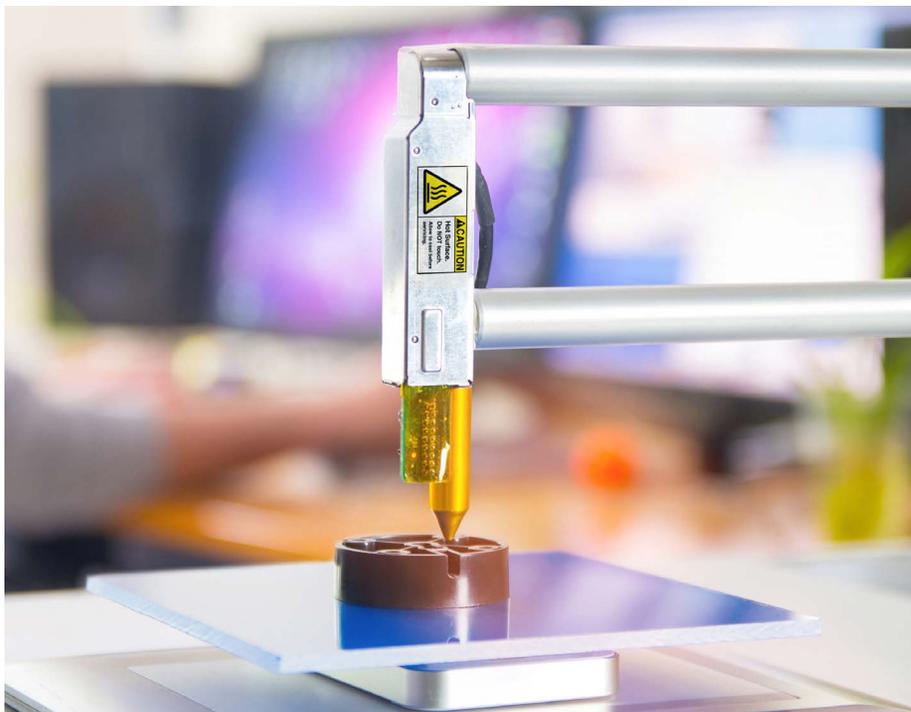
As we close this paper, it must be pointed out that the technologies mentioned here are not new. The idea of a 3D Printer has been there since 1983. Moreover, the first connected device existed as early as 1982 when a Coke machine at Carnegie Mellon University was able to track its own inventory and could report when it would need a refill. These are definitely not new technologies or trends, but they are becoming disruptors now because of constantly lowering price points thereby leading to many viable use cases.

The reality, however, is that it is not the traditional industry leaders who are shaping the disruptive future in their industry. Uber, Google and Tesla are disruptors to the Volkswagens, Toyotas or GMs of the world. The patent for a 3D Printer was first applied by a team from French General Electric in 1984, but was abandoned because of "lack of business perspective". 3 weeks later, Chuck Hull, went on to the file the patent and 2 years later developed the first prototype. In the market for wearables, one will assume that Google or Apple will be the leader, but a little known vendor, Pebble, has sold more than 1 million smart watches and is way ahead of the competition.

Good number of manufacturers have already gone to their drawing boards to revisit their strategy based on these trends and those who haven't done so and don't even plan to do so, must be ready to face the consequences of this disruption.

About the authors

Ravi Appayya

With more than 18 years of rich experience in CX Consulting and Delivery for global clientele, Ravi brings with him a unique knowledge of the customer experience domain from a practitioner's perspective. He has spent the last 8 years closely working on CX initiatives in manufacturing sector. He brings all of this experience to project current trends to future challenges that are most likely to redefine the way this vast industry segment will operate.

Rohit Kumar

Rohit has 12+ years of experience in Software Development, Consulting, Marketing, Account Management & Business Development. He has worked with clients across the world with a focus on understanding their pain points to provide the best solution. At Infosys, Rohit heads the GTM strategy for the Oracle CX practice and is responsible for pitching Infosys' CX offerings to the customers.

References:

[1] https://www.nist.gov/sites/default/files/documents/mep/data/Manufacturing-the-Future.pdf

[2] http://www.gartner.com/newsroom/id/3165317

[3] https://qz.com/344466/connected-cars-will-send-25-gigabytes-of-data-to-the-cloud-every-hour/

[4] http://dataconomy.com/2015/12/how-data-science-is-driving-the-driverless-car/

[5] https://www.forbes.com/sites/forbespr/2016/05/25/customers-like-to-research-online-but-make-big-purchases-in-stores-says-new-retailer-study/#147c6ce244bb

[6] https://www.nasa.gov/mission_pages/station/research/news/3Dratchet_wrench

[7] http://thesocialmediamonthly.com/auto-industry-needs-use-social-media-lead-acquisition/

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