Reducing Time to Market for Manufacturing Innovations through Social Product Development

Abstract

Manufacturing markets are maneuvering from physical products to curated experiences, from tangible goods and services to intangible emotional connections, and from industrial economics to innovations. In the face of such disruptions, organizations have struggled to ramp up internal talent pools and knowledge systems linearly due to time constraints, talent scarcity, and cost inefficiencies. Organizations can work with the passionate crowd, who are intrinsically motivated to create business value across functions—to build better products and services, design frugal supply chains, improve brand advocacy and customer experience management, ensure sustainability, or generate leads for products and services. In this paper, we look at a plug-and-play social product development platform that harnesses the wisdom of the crowd from both within or outside the enterprise, to co-create value through crowdsourcing, social listening, gamification, collaboration, and analytics.

Social Product Development: A comprehensive, result oriented approach based on crowdsourcing

Moving from 'piece meal to holistic view'

Crowdsourcing has been adopted occasionally, in silos in manufacturing organizations by enterprises focusing on innovation management to generate ideas from outside the enterprise. The current paper focuses on leveraging the platform for solving the relevant problems across the manufacturing value chain.

Moving from 'ideas to monetization'

Adopting enterprise contextual intelligence through analytics or machine learning components help to make informed decisions, aligning crowdsourcing with the enterprise business processes landscape to reap returns on investments. Examples include:

1.Targeting the right crowd for a crowdsourcing program by predicting the participant crowd profile through gamification and analytics to shorten the lead time of the crowdsourcing process.

2.Combining similar ideas from diverse crowd participants and identifying patterns in incoming ideas can improve the overall potential value of ideas in a crowdsourcing program.

3.Converting the ideas to products, features, or services by feeding them into market research and product planning processes.

4.Creating a 'test bed' to validate the ideas and assess the adoption rate or success of ideas before big bang implementation to optimize innovation investments.

Why Manufacturing Organizations Must Adopt Social Product Development

Here are five key trends that are bolstering the case for social product development platforms:

1.Organizations need a proactive approach, agility, and the ability to anticipate the future and ensure sustainable business growth

Yard Club[1] , a California startup, created a peer to peer marketplace that helps customers earn income on idle

construction equipment by renting it to verified club members, maximizing the financial returns companies receive on fleet investments. With no guarantee that an organization's competitors might come only from within the industry, social product development platforms help manufacturers run a series of lean innovation experiments involving employees, start-up partners, suppliers, and customers across the globe to anticipate future business trends and validate it with their target markets.

2.Specialist expertise and seamless collaboration are critical to develop cross-disciplinary future products, processes, business models, and cost innovations.

Such talent might not be available on the payroll of an organization, or even locally. Social product development enables seamless collaboration that leverages diverse expertise from beyond the boundaries of the manufacturing enterprise to help create compelling products, services, and processes

3.Digital social collaboration platforms increasingly offer proven models of crowd engagement.

On First Build, a crowdsourcing product development platform for the appliance industry built by GE, individuals design and submit ideas, and the community tests out these ideas and creates products using 3D printing. First Build then manufactures and delivers the next generation of major home appliances to customers.[2] Crowdsourcing, crowdfunding, and co-creation are proven models to engage with a larger ecosystem to create value.

3.Socially-savvy employees, partners, customers, and other stakeholders have embraced an open culture

Generation Y, Generation Z, and millennial employees, partners, and stakeholders are

socially savvy digital natives—comfortable with and accustomed to expressing themselves on digital collaboration platforms. By adopting social product development, manufacturers can ensure that their offerings resonate with that of their audiences' persona and culture.

4.Technologies continue to become powerful, feature rich, accessible, and cost effective.

A social product development platform that is scalable and replicable can be built using mostly open source technologies, reducing operational overheads and costs.

In September 2015, GE invited data scientists, analysts, and GIS specialists to develop a data science model to solve water scarcity. In two months, it received about 1000 ideas and the winner was granted a cash prize of $10,000. The idea owner was invited to participate in the development of GE's algorithm for the solution.[3]

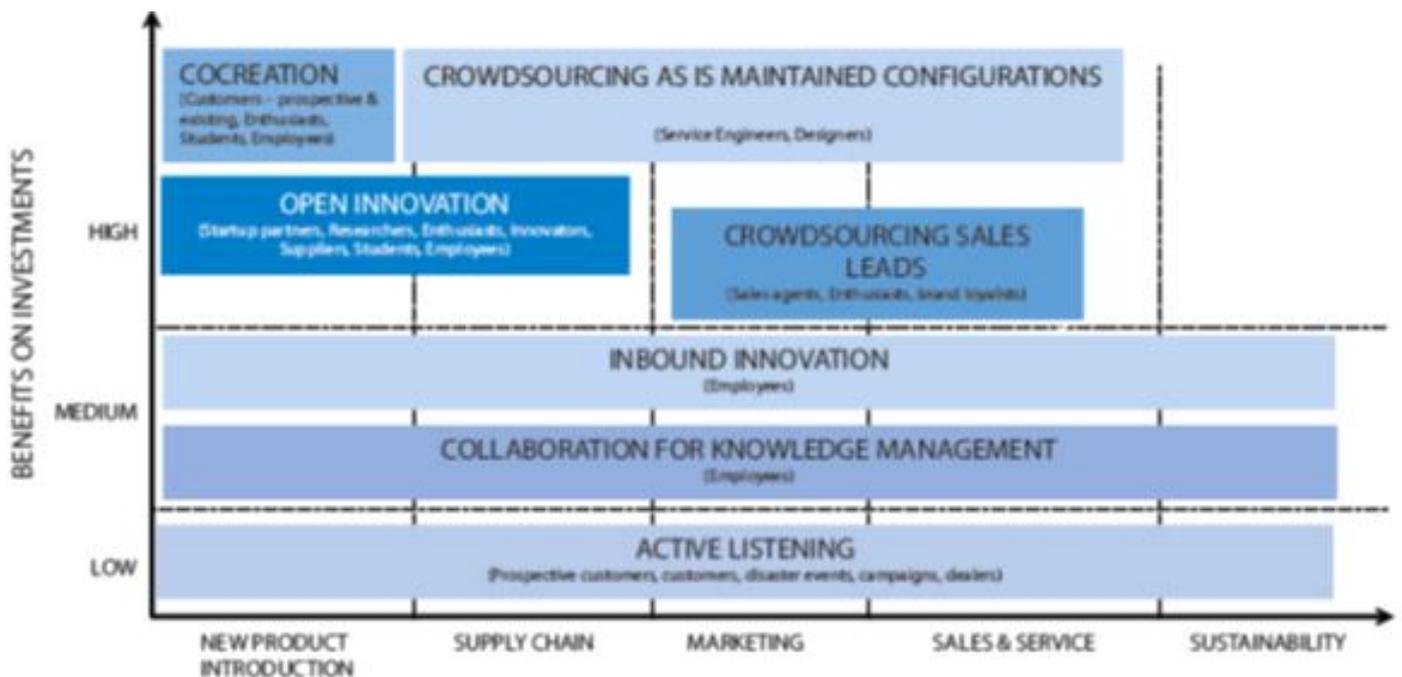## Social Product Development Platform Component Checklist

An ideal social product development platform must be flexible enough to deliver either standalone or end-to-end services to enterprise stakeholders based on their needs. This is possible if it is built of components that can be quickly configured, such as:

- Social media listening
- Data acquisition
- Collaboration with communities
- Gamification
- Data modeling
- Analytics and insights discovery

Social Product Development Platform: Use Cases

Unlocking Real Business Value

By using a social product development platform, organizations can achieve real business benefits including faster and first-time-right product development, stronger customer engagement, lower costs, higher revenues, and collaborative learning.

Cloud hosting models allow organizations to build and leverage the social product development platform-as-a-service to reduce TCO. While considerable investments are required to manage the platform, there are significant returns in form of innovative business products, services and processes.

The potential benefits of an organizational social product development platform across the maturity curve

Recognizing and Addressing Concerns Early

To ensure success, manufacturers that plan to adopt a social product development platform must address key concerns including:

- Willingness of the crowd to provide ideas or to consent to create value with an organization

- Ownership of intellectual property rights (IPR) of ideas in a crowdsourcing program

- Possibility of competitors misappropriating crowdsourced innovations

Key Attributes and Groundwork for Ensuring Success

Manufacturers need to inculcate cultural and technological attributes to ensure the success of a social product development platform such as creating an open culture, picking the right crowd, providing the right tools, and integrating crowdsourcing with existing processes

Before embarking on creating a social product development platform, organizations need to:

- Understand the foundational units of practicing social product development and observe industry leaders.

- Plot the skills canvas and the innovation requirements for the enterprise ten years ahead.

- Identify or develop the relevant communities outside the enterprise for collaboration.

- Create a cross-functional team within the enterprise to drive the social product development journey.

- Pilot initiatives with themes aligned to business priorities and evangelize success stories in the organization.

- Repeat the initiatives for varied use cases and functions, learn from experience, and embed the culture in the organization's DNA.

Conclusion

Today, collaborative consumption, globally dispersed diverse talent, and the maturity of social collaboration platforms, make it both essential and possible for manufacturers to tap the talent pool beyond their organizational boundaries, combine structured and unstructured data to anticipate the future, and know what existing and potential customers want at any given moment Manufacturers must streamline processes to take advantage of crowdsourced social product development.

References

[1] https://www.yardclub.com

[2] Stratys.com, GE Affiliate, FirstBuild, Will Use Crowdsourcing and Stratsys 3D Printing to Invent Next Generation of Home Appliances, September 2014, accessed,

July 2016, http://investors.stratasys.com/releasedetail.cfm?releaseid=871371

[3] GE Innovation Lab, Solving Water Scarcity Through Reuse: Data Science Innovation Challenge (November, 2015), accessed July 28, 2016,

https://geinnovationlab.com/10eqs/solvingscarcitythroughwaterreuse

About The Authors

Vijaya Kumar

Vijaya Kumar is a domain consultant with the Manufacturing Innovation and Transformation Group at Tata Consultancy Services (TCS). He works with global manufacturing organizations to help them make informed decisions leveraging social data.

Payal Khandekar

Payal Khandekar is a domain consultant with the Manufacturing Innovation and Transformation Group at TCS. She collaborates with global manufacturing organizations and advises them on their overall product lifecycle management strategy and roadmap development, product cost management, competitor intelligence and product engineering processes.

Contact

Visit TCS' Manufacturing unit page for more information

Email: manufacturing.solutions@tcs.com

Subscribe to TCS White Papers

TCS.com RSS: http://www.tcs.com/rss_feeds/Pages/feed.aspx?f=w
Feedburner: http://feeds2.feedburner.com/tcswhitepapers

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled, infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

For more information, visit us at www.tcs.com

Experience certainty.   IT Services
Business Solutions
Consulting

TCS Design Services IM | 11 | 16