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## Introduction to DBM

- The global Industry 4.0 market stood at \$78.2bn in 2018 and is projected to reach \$260.7bn by 2026 [fortunebusinessinsights]. About 15 million industrial sites worldwide are seeking Industry 4.0 solutions [harborresearch]. In 2019, there were 7.6bn connected IoT devices worldwide. In 2030, this is expected to grow to 24.1bn [iotbusinessnews]. Global smart cities market size is expected to reach \$463.9bn by 2027, up from \$83.9bn in 2019 [grandviewresearch]. Similar growth expectations are predicted for smart transport, smart entertainment, smart health, smart home, and other smart X scenarios.
- Keeping up with these predictions will become increasingly difficult as more and more sophisticated devices need to be delivered, deployed, maintained and kept secure at every step of the way. Additionally, solutions will become more customisable, increasingly multifaceted, and leverage thousands of products, services and resources from hundreds of business partners. All these challenging requirements need to be handled with grace as the markets grow at breakneck pace.
- If we can work together within a secure and frictionless ecosystem of business partners, the financial opportunities presented by Industry 4.0 and Smart X scenarios will become available to all the buyers and sellers within the ecosystem, and the benefits to customers and consumers should spread far and wide.
- For example, customers will benefit from greater choice, lower costs, better customer experience, and solutions that match their exacting and ever-evolving requirements, without needing to do their own, over-the-top, often costly, complex and time-consuming integrations. Consumers will benefit from solutions that work in exactly the way they want. For utility scenarios, this might mean providing utility operators with greater insight so they can make efficiency adjustments or avert catastrophic failures. For health scenarios, this might mean advance warning of risk to health or life. Industry 4.0 and Smart X scenarios will lead to massive efficiency gains and expedite the move away from fossil fuels, both of which will improve the health of the planet.
- The Digital Business Marketplace can enable this ambition and, through the TM Forum Catalyst programme, the project is now at a technical level of maturity to realise the commercial deployment of a secure and frictionless ecosystem of business partners. In support of this, we are delighted to say that a number of Catalyst champions are working with customers to sign contracts to deploy Industry 4.0 and Smart X scenarios based on the DBM solution.

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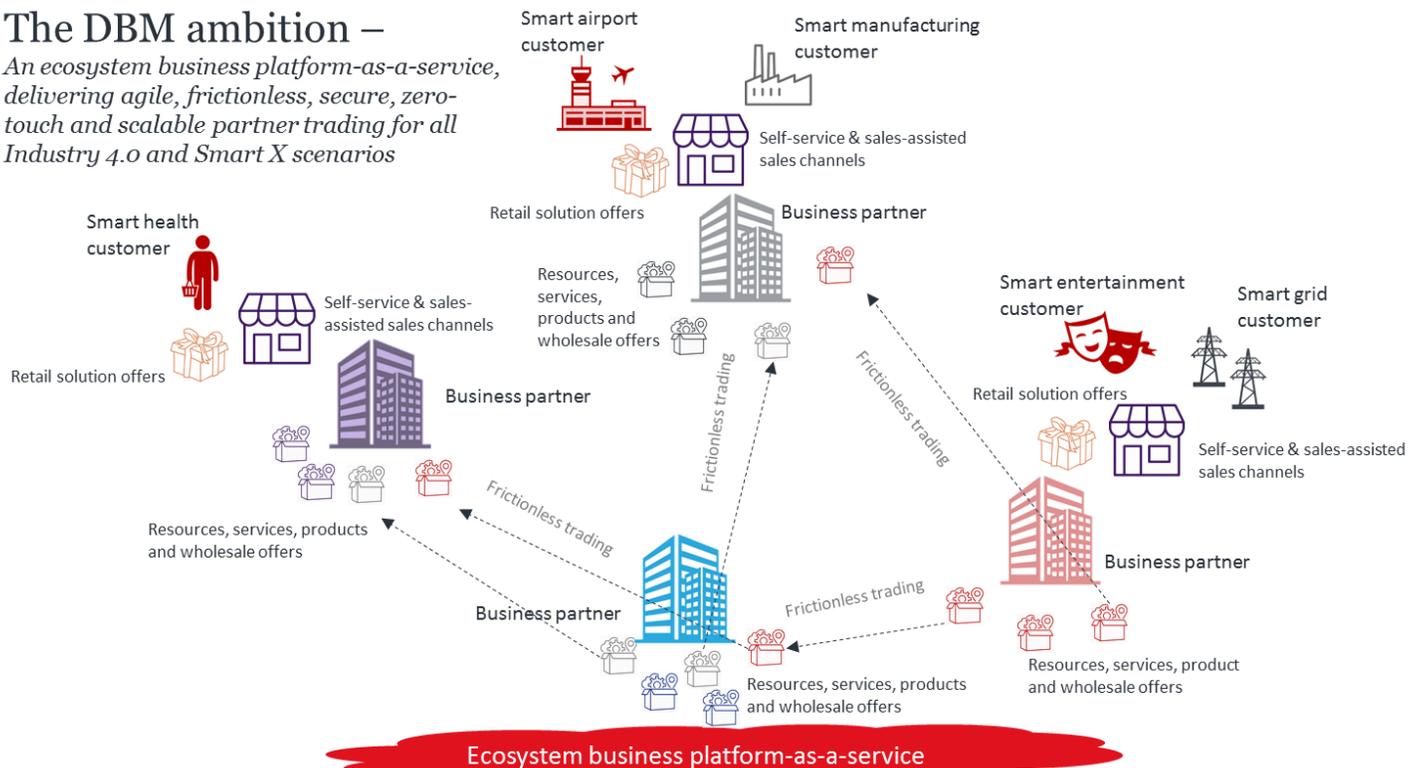
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- So, what is the Digital Business Marketplace, or DBM, how does it work and how does it enable this ambition?

## The DBM ambition –

*An ecosystem business platform-as-a-service, delivering agile, frictionless, secure, zero-touch and scalable partner trading for all Industry 4.0 and Smart X scenarios*



- DBM is a platform-as-a-service capability that can be made available from the cloud to any business wishing to take part in a secure and frictionless digital marketplace. When joining the marketplace, businesses are provided with a digital multi-partnering ecosystem platform that has a commercial trading capability, DLT-based trust and assurance capabilities, a zero-touch capability and security capabilities built-in.
- Ecosystem business partners, be they hyperscalers or traditional businesses, are now in a position to do a number of things:
  - They can bring resources, services and products into the ecosystem, by digitally modelling their capabilities and integrating their fulfilment, assurance and billing systems with the models.

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- They can frictionlessly aggregate the resource, service and product models into retail solution offers, and make these offers available for customers to purchase, either directly through own storefronts, or indirectly through agents.
  - They can frictionlessly aggregate the resource, service and product models into wholesale offers and frictionlessly make these wholesale offers available to other ecosystem business partners.
  - They can frictionlessly bring in wholesale offers from other ecosystem business partners and aggregate them with own resources, services and products to create further retail solution offers for customers to purchase.
- All ecosystem business partners follow the same blueprint around cybersecurity, distributed ledger technologies and zero-touch orchestration, thereby not only permitting uniform ecosystem operations, but also providing a co-ordinated approach to deliver, deploy and maintain customers' solutions in a secure, zero-touch and frictionless way.
  - The DBM Catalyst is now reaching the end of phase 3, where our focus has been around productisation and creating momentum around Industry 4.0 and Smart X scenarios. We have been fortunate enough to build seamlessly upon phases 1 and 2 of the catalyst without needing to retrace our path.
  - [In phase 1, we created an ecosystem of service and resource partners, and leveraged secure zero-touch orchestration to remove costly and labour-intensive processes that are hampering the mass deployment of potentially billions of IoT devices. To achieve this, we orchestrated the commercial and technical deployment of security credentials, firmware, software, and configuration data onto in-situ IoT devices.]
  - [For phase 2, we added more partner services and resources into our ecosystem, such as robotic arms, surveillance cameras, AI, universal CPE and private LTE. We used these services and resources along with those from phase 1 and demonstrated how product managers could effortlessly craft Smart X solutions from our of ecosystem of resources and services for Smart Retail, Smart Airport and Smart Factory scenarios.]
  - Phase 3 of DBM has 30 fully signed-up organisations, many of which are very active and working in a collaborative and ecosystem-friendly way.
  - Phase 3 adopted a team-of-teams structure and is able to maintain an agile approach by operating 4 smaller teams, or what we call initiatives. Three of our initiatives are working on Smart Grid, Smart Entertainment and Smart Manufacturing use cases, while the 4<sup>th</sup> initiative is working on a Secure Supply Chain use case. All initiatives are working to a common architecture

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and following fully repeatable plug and play patterns. Our Smart Grid initiative is co-led by Agile Fractal Grid and BearingPoint//Beyond; Smart Entertainment is co-led by NTT and BearingPoint//Beyond; Smart Manufacturing is co-led by BT and Maxbyte; and Secure Supply Chain is co-led by BT and R3.

- The Secure Supply Chain initiative is fundamental to all Industry 4.0 and Smart X scenarios. Secure supply chains form the part of the Smart Infrastructure needed for the secure and zero-touch delivery, deployment and management of devices and services for all Industry 4.0 and Smart X scenarios. [Other examples of Smart Infrastructure are Data Hubs, Cybersecurity, Cloud and Edge compute.]
- Hopefully, these presentations and demonstrations have given you a flavour of the breadth and depth of the DBM Catalyst.
- Phase 3 of the Catalyst has super-exceeded our expectations. 28 active champions and participants, ranging from hyperscalers to sole operators, to consortia and universities is truly amazing, and the volume and quality of output is unprecedented.
- Getting a Catalyst of this size off the ground in such a short space of time was always going to be challenging, so we are determined not to stop here. We are currently drafting a long-lived TM Forum project charter to establish a permanent ecosystem platform within the TM Forum and to contribute to the Open Digital Lab and Open Digital Architecture. And we are creating a DBM IV Catalyst to address additional peer industries, initially around Aviation and Health. But before the work on these activities gets underway, we will be enhancing and taking our solution to AWS re:Invent in December, so we hope to see you there!
- We have used the following TM Forum Open API standards and are looking to use and create others in follow up activities. And we are using the Infonova platform, which has been designed to leverage the SID and eTOM.
  - Product Catalogue API (TMF 620)
  - Service Catalogue API (TMF 633)
  - Product Inventory API (TMF 637)
  - Service Inventory API (TMF 638)
  - Product Ordering API (TMF 622)
  - Service Ordering API (TMF 641)
  - Usage API (TMF 635)
- I hope you agree that the business value of the solution will be a game-changing on global proportions, as is becoming evident by customer signings for DBM-based solutions.

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- We have more material and we would like to invite you to book further sessions on the DBM III Catalyst page if you want to cover specific aspects in more detail. We hope you enjoyed this session but for now we thank you for your time. Enjoy the rest of your day and keep safe!