

Continual Collaboration Value in the Era of IOE – Connecting Digital Ecosystems



The Open Digital / IoE Program



IoE is here, now, and ...

- We all agree that the Internet of Everything (IoE) is going to be huge, encompassing mobility, big data and analytics, sensors, people, places, things and well...everything. The rate of change, innovation and market disruption makes it impossible to envisage what the end game is.
- In this webinar you will learn how TM Forum is uniquely placed to address IoE opportunities and challenges. Our members are working in a set of diverse collaboration projects to help global enterprises, service providers and suppliers drive cross-industry innovation.
- We will present the latest best practices, tools and enabling technologies in Frameworx 15.5 and the plans for our 2016 projects. We will also review the multi-company Catalyst demonstration projects that we currently have underway. And, you will find out all the ways you can get involved to contribute to and benefit from this great work.

Covered in this Webinar

IoE and the TM Forum

- The current state of IoE
- TM Forum Collaborative projects and workstreams
- Tools & enabling technologies in Framework 15.5 and beyond
- The Innovation Center for industry verticals in IoE
- How you can get involved, upcoming events and other unique opportunities
 - Expert speakers:
 - Craig Bachmann, Senior Director, Open Digital Program, TM Forum
 - John Wilmes, Director, IoT Projects, TM Forum
 - Jenny Rottinger, Program Manager, Open Digital Program, TM Forum



Open Digital Program and IoE

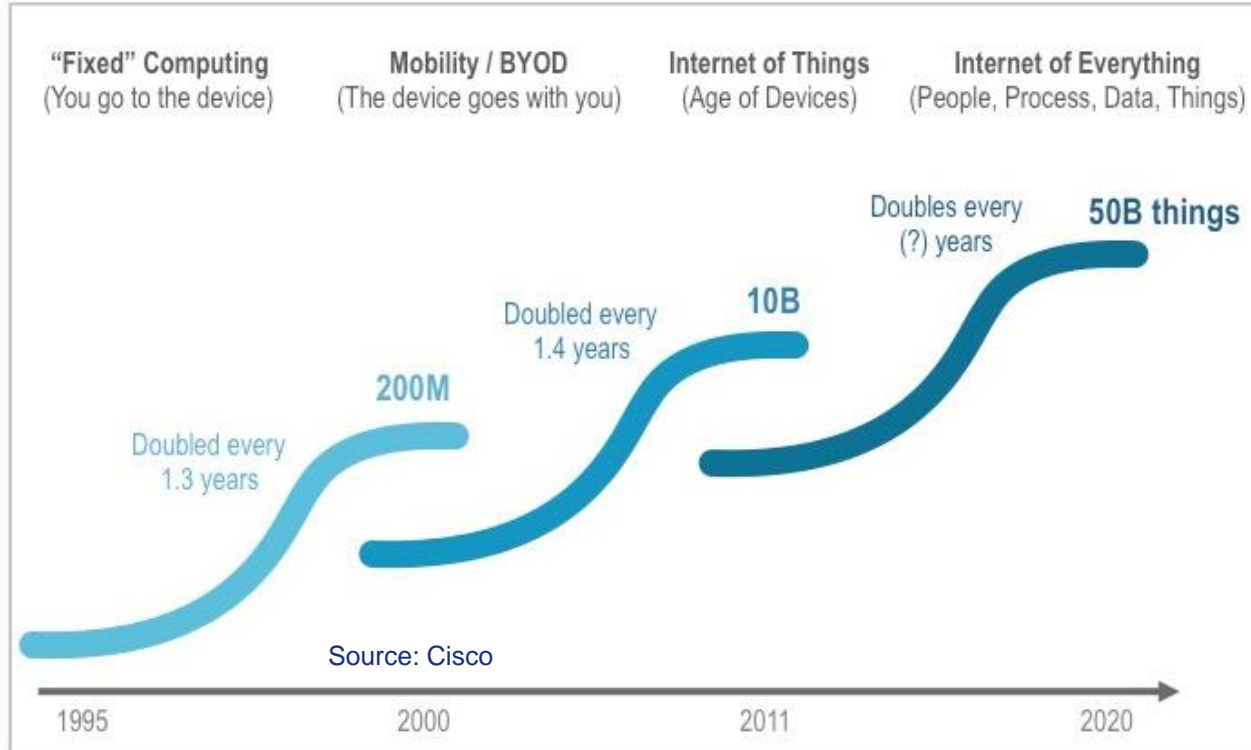
Size and Definition

- The IoE market is expected grow \$23.97 trillion by 2020
- The Global Internet of Everything (IoE) market is one of the hottest markets across the globe and is said to be the next level of IoT. The IoE is a combination of person to person (P2P), machine to machine (M2M) and person to machine (P2M) connections. The IoE technology allows smart/intelligent devices to communicate with each other through the internet, collect data, analyse and process the data without much involvement of the people thereby delivering unique information to the users on demand.
- Source:
http://www.researchandmarkets.com/research/bmdmvq/global_internet



IoE – Revolution or Evolution

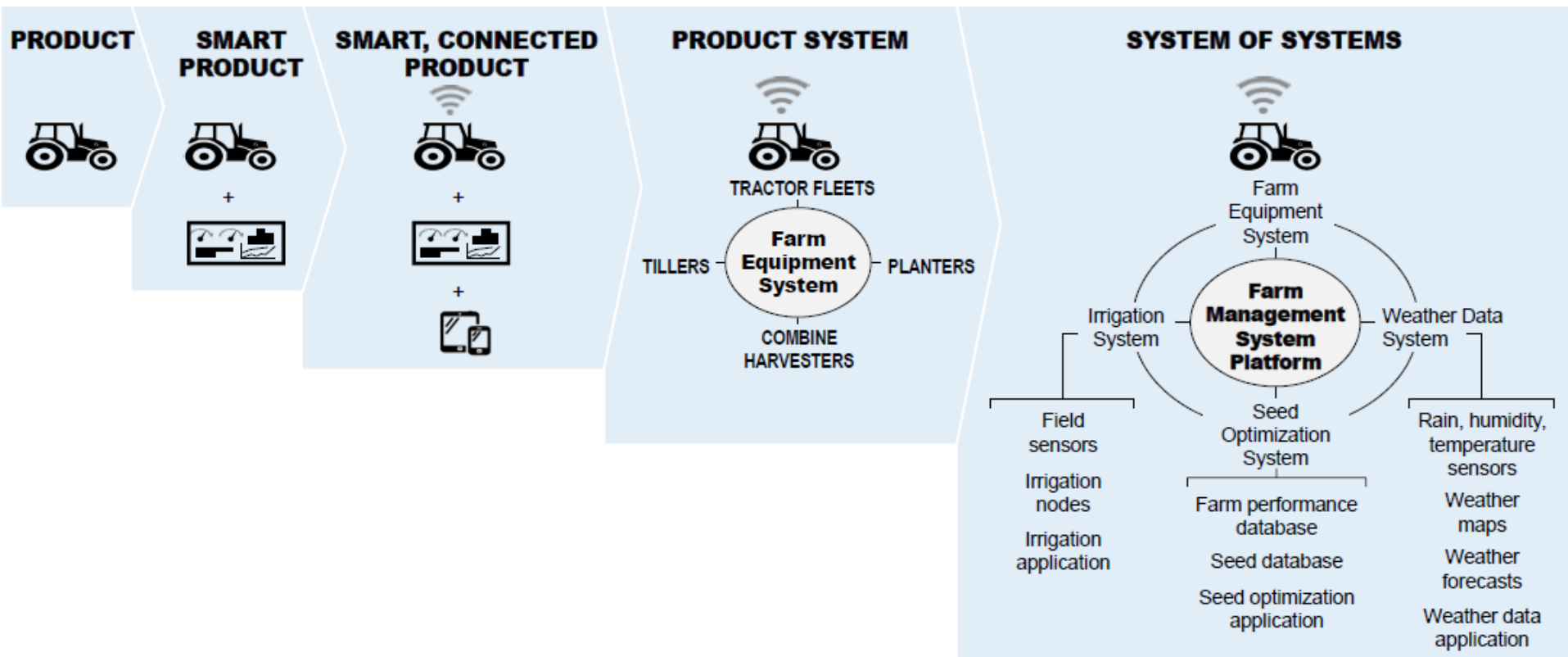
IoE as an evolution



But, it is revolutionizing almost every industry....

Systems of Systems

Continual evolution from Product to Systems of Systems



The Roadmap of Challenges



Collaboration as the best approach to address the IoE Roadmap of Challenges:

The TM Forum's Open Digital / IoE Program





The Open Digital / IoE Program



The evolution to IoE

How companies execute their businesses, technology, partnerships and innovation will be the difference between winners and losers in the digital world

- **Connecting people, places and things** to realize new value by leveraging reimagined business models, scalable technology and innovative market solutions
- As opportunities and disruption arise from IoE, there is a continually shifting landscape of business, technology and market challenges – **a Roadmap of Challenges** to be addressed and effectively managed
- IoE is becoming the way of providing services and applications to consumers, enterprises and industries through **ecosystems of partners.**

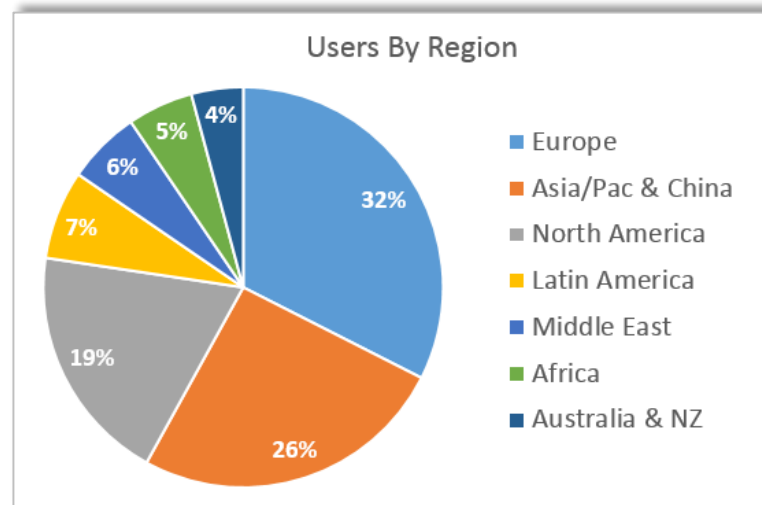
A pragmatic, collaborative approach to managing digital ecosystem provides a high value way of managing the **Roadmap of Challenges** focusing on (1) Best digital customer experience, (2) best collaboration among partners to build and join ecosystems and (3) the best use of virtualized services in new business models





Over 133,500 Open Digital Subscribers of the TM Forum's Open Digital / IoE Monthly Newsletter, including over **4484 CxOs**

Over 400 leading members have joined the project:





The Open Digital /IoE Program



Verticals and Horizontals

The Roadmap of Challenges examples

- “... IoT requires a different set of practices (from design to construction), a different set of techniques and a mix of attitude from "pioneer" to "settler". The underlying components might be quite commodity but what is being built with these is often a process of discovery and exploration. Though there are common lessons, there's a very different mindset and value chain relationships to IoT which is built from experience. What I'm saying is Physical + Digital is not the same as Digital.”
- <http://blog.gardeviance.org/2015/05/the-chief-internet-of-things-officer.html>



Harvard Business Review –

Professor Michael Porter's point of view of How Smart Connected Products Are Transforming Companies

- From product to Systems of Systems – example Tractor to Smart Farming
 - Another example: Chamberlain and digital garage door journey
- The Business Models – new, complex, B2B, B2G, B2C, B2"x", Ecosystem to Ecosystem, M2M, etc.
- Impact on organizations – People, Skills, process, infrastructure, etc.
- Business unit structure – legacy Business Unit Structures do not support the Digital Marketplace
- Changes in the “work” – Processes, Titles, Careers
- The Data (the new oil)/Analytics (The new refinery) – people, place, things
- Product vs. Systems vs. Platforms – the level of investment
- Devops – Managing continuous X – a Roadmap of Challenges

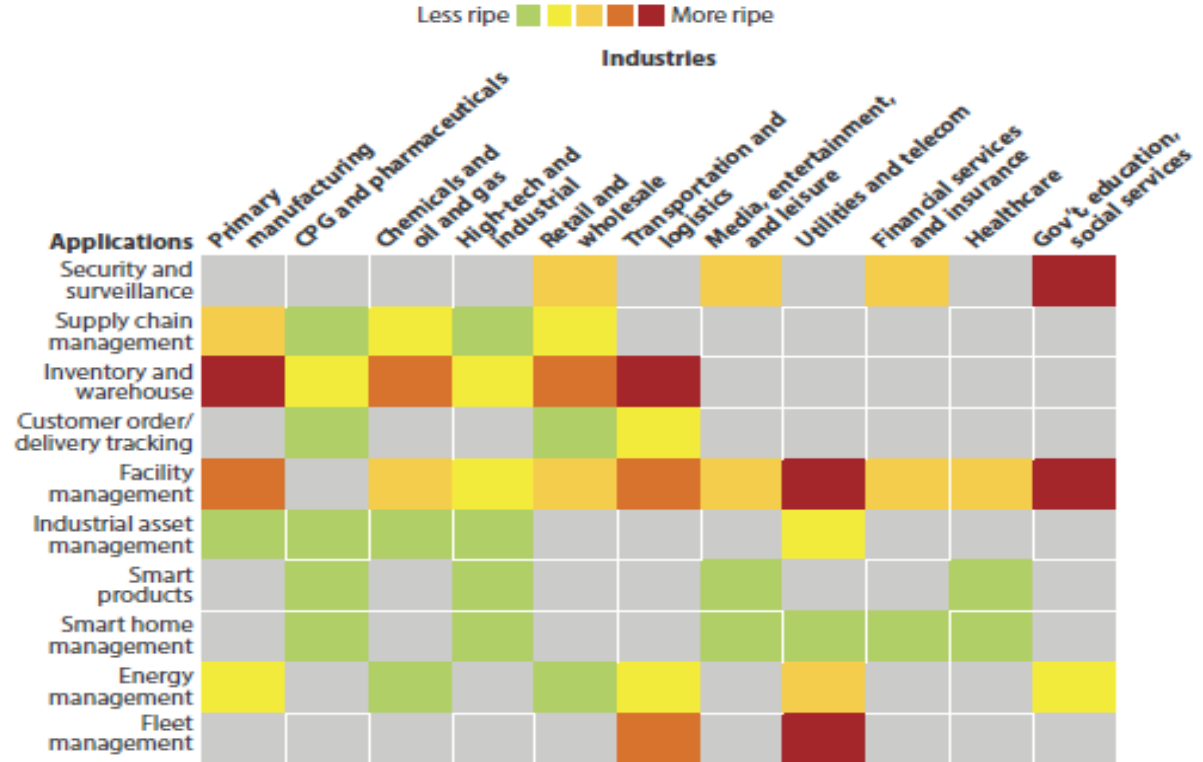


The Roadmap of Challenges

Many Options, Opportunities – what is the best way to focus?

Vertical
Ecosystems,
Functional
Areas, and
And Digital
Service
Platform
Opportunities

Timing of the
collaboration,
Timing of
catalysts



The top 3-5 challenges we are solving (The IoE Roadmap of Challenges)

What are the top 3-5 IoE Management challenges?

- How do I address complex business models to support Ecosystem to Ecosystem digital Services?
- How do I address the evolving marketplace of Partnership Management – buying and selling services– across Ecosystems and also manage Security risk?
- How do I craft a IoE Business, Technology, and Market Plan of Action?
- How do I manage the constantly evolving roadmap of challenges?





The Open Digital / IoE Program



Open Digital Program

A purpose-built program to address IoE opportunities and challenges

Digital Service Business Models (why):

Creating the “wikipedia” of Digital Business scenarios and models that will enable innovation in IoE

Enabling technologies to support Digital Ecosystem management (what):

best collaboration practices among Digital Ecosystem partners with API's and security
Digital Services Orchestration for IoE Management Scenarios and Digital Ecosystems Platform

IoE Innovations Center for Industry Ecosystems (who):

Early stage projects in IoE, Smart X, Digital Services – such as Digital Finance, IoE and analytics, Digital Health, Smart Building and Retail

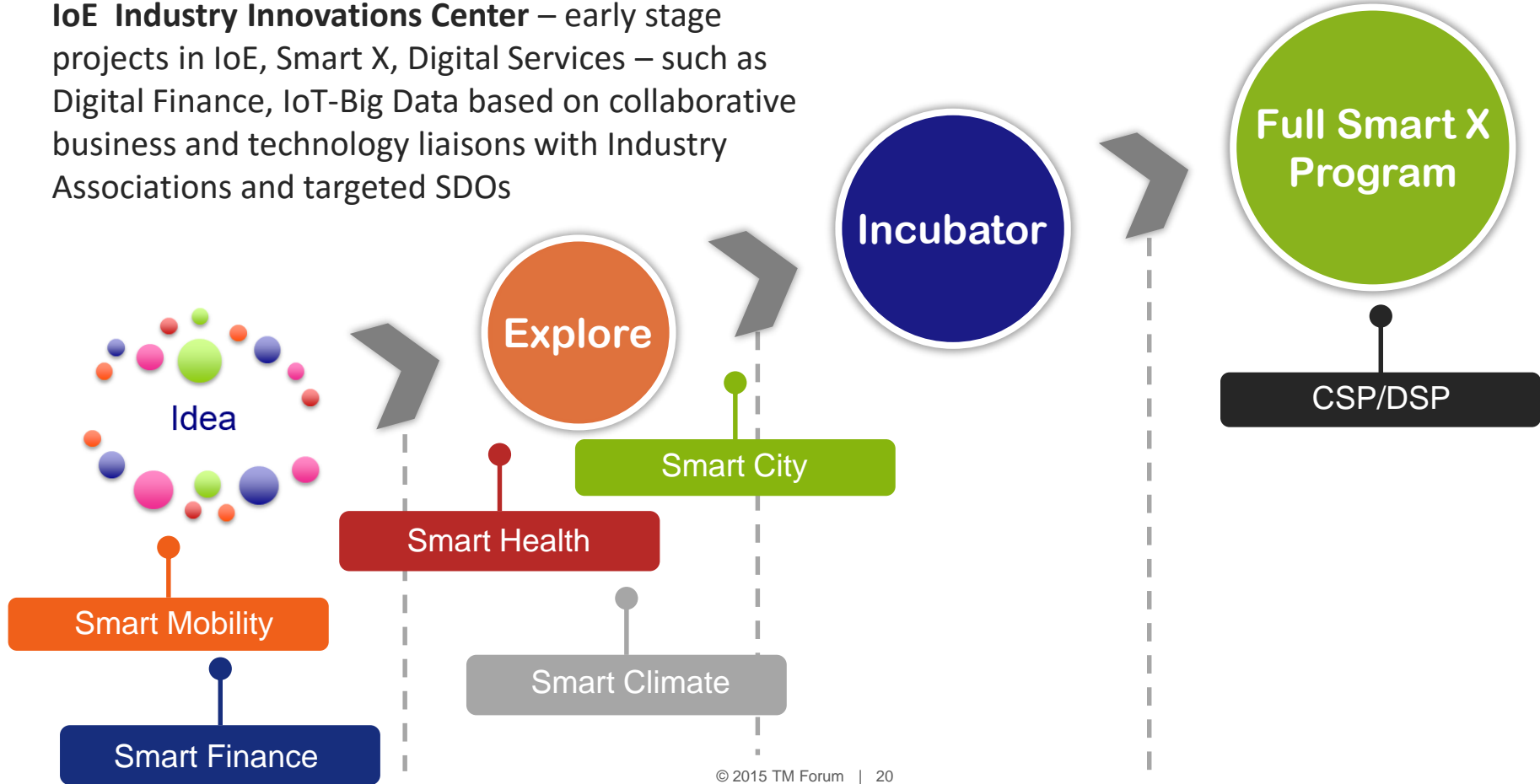


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Innovations Center

IoE Industry Innovations Center – early stage projects in IoE, Smart X, Digital Services – such as Digital Finance, IoT-Big Data based on collaborative business and technology liaisons with Industry Associations and targeted SDOs



Leveraging Catalyst Projects

- Three years of award-winning Catalyst projects in Smart City, Smart Energy, and Smart Health.
- Current Catalysts projects are focused on
 - Connected Home
 - Digital Finance
 - Connected Car
 - Smart Health
 - Smart Energy
 - Including security and privacy, customer experience and analytics requirements
 - New Business Models
 - New Ecosystems
 - Manufacturing
 - M2M
 - Mining
 - Logistics
 - Mobility
- <https://www.tmforum.org/collaboration/catalyst-program/>

Tools and Enabling Technologies in Framework 15.5 and beyond

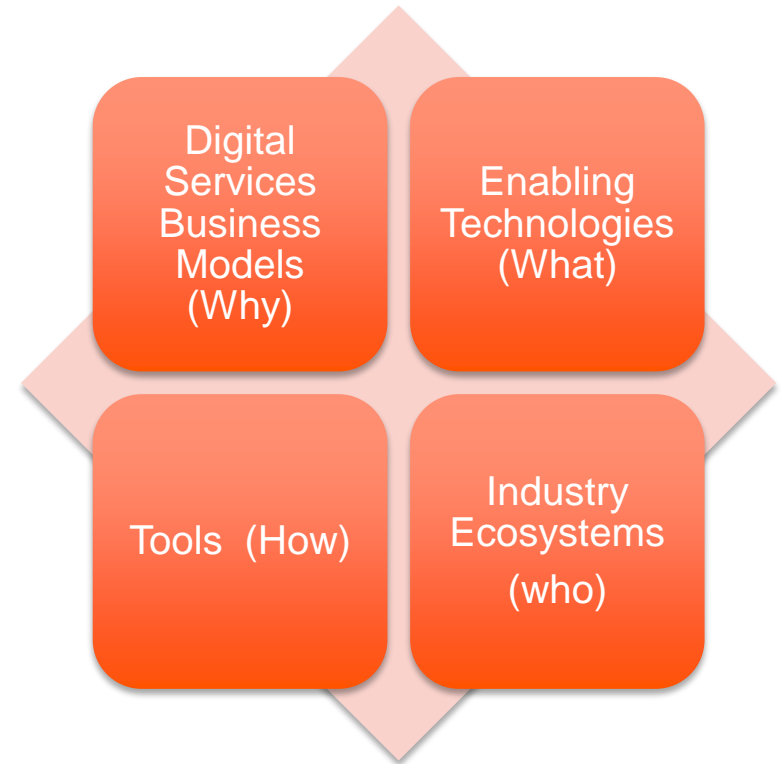


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Open Digital Components

A pragmatic, collaborative approach to digital ecosystems is essential. How companies execute their businesses, technology, partnerships and innovation will be the difference between winners and losers in the digital world. Winning is all about performance, built on the best customer experience, the best collaboration between partners to build and join ecosystems together, and the best use of virtualized services in new business models. TM Forum is focusing on these areas.



Digital Service Business Models

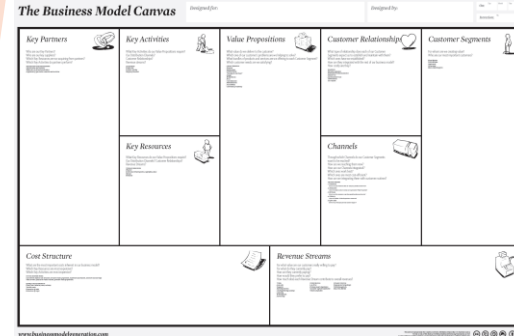
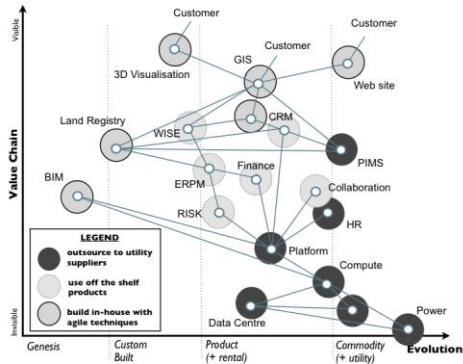
TM Forum Assets

In IoE, the innovation is in the new business models and the ability model ecosystem interaction

A unique resource for “seekers” and “solvers” addressing the new innovative business models for IoE. This includes –

- Ecosystem Scenarios
- Business Model Canvases
- Wardley Models
- Case Studies
- Business Architectures
- Business Forecasting
- Buying/selling capability
- Best Practices

Continuous IoE evolution means constantly aligning business approach, technology, and market conditions



Enabling technologies

TM Forum Assets

De-mystifying the complexity to adopt common best practices

- Enabling technologies that accelerate opportunities in Digital Services including:
- Best Practice Models and Frameworks (cross domain/industry)
- Partnership best practices (B2B2x)
- Open Source assets
- API's
- Touchpoints and examples
- Architectures (Cloud, XAAS, NFV, ..)
- Big Data Analytics
- Digital Customer Experience
- Security
- Privacy

Collaboratively developing the common language for the next generation of Digital Services



Internet of Things Reference Model



Tools and Methodologies

Pragmatic – “real life” approach to the Roadmap of Challenges



TM Forum Assets

- Tools and Methodologies that enable implementation and lower risk including:
- Crowdsourcing Methodologies for best practices
- Casewise/Confluence models and Collaboration
- Github – building software and beyond
- Incubators
- Sand Box – testing ecosystems and IoE
- Continuous Catalyst showcases

Continuous Catalyst showcases demonstrate the end to end “Connected World” – examples and resources



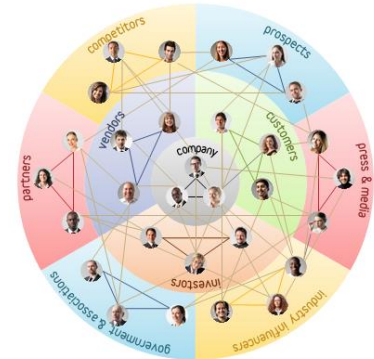
Industry Ecosystems

Enabling the IoE
“seekers” and “solvers”
across fast-moving
Ecosystem to
Ecosystem
management scenarios

TM Forum Assets

- The Catalyst program and workstreams focused on applying best practices for the IoE Industry “seekers” and “solvers” including:
 - Smart City
 - Digital Finance
 - Digital Health
 - Smart Energy
 - Connected Car
 - IOT/IOE cross industry
 - Liaisons with Industry Associations and SDO's.

Enabling Digital Ecosystems
to thrive in complex partner
environments



Deliverables for Framework

Assets in place

- B2B2X – Partnership Guidelines
- Business Models/Scenarios
- Digital Services Reference Architecture (DSRA)
- API specifications for DSRA services
- Industry Engagement Methodology
- Digital Services Toolkit Methodology

Current Work

- Ingesting Industry Business Scenarios
- Collaboration across Business Scenarios, Enabling Technology, Tools, and Industry Ecosystems.
- Applied Framework for IoE Catalyst Proof of Concepts
- Extensions of B2B2X and DSRA
- Cross Industry Ecosystem API alignment

Future Focus

- IoE - Roadmap of Challenges and business scenarios – a “wikipedia”
- End to End Digital Ecosystems Management approach including - Improved partnering via DSRA extensions, API's etc
- Industry Ecosystems-Catalysts - Proof of Concept Showcases

How you can get involved, upcoming events and other unique opportunities



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The Road to Nice 2016

Key Milestones



More Information....

Web - <https://www.tmforum.org/vertical-markets-connected-ecosystems/iot/>

Inform - <http://inform.tmforum.org/tag/internet-of-things/>

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