HPC Meets Big Data Big Data & Service Innovation

การประยุกต์ในภาคอุตสาหกรรมและภาครัฐ สำหรับ Thailand 4.0

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NECTEC ACE 2017
วันจันทร์ที่ 11 กันยายน พ.ศ. 2560
ศูนย์ประชุมแห่งชาติสิริกิติ์

Cyber-Physical Data Cloud Computing The 2 - World Model



https://image.slidesharecdn.com/cyber-physical-data-cloud-computing-use-cases-kyoungsookkim

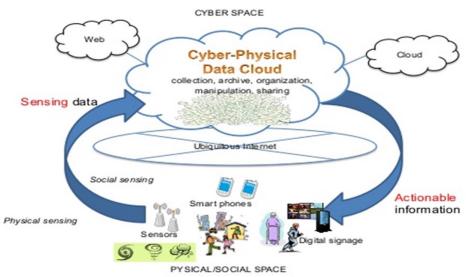
The New Business Ecosystem

The Smart Service Systems

- IoT Products---Smart products and services
- IoT Systems---Smart business systems, Factories, etc.
- IoT Environment---Smart
 - Buildings, Cities, etc.



Cyber-Physical Data Cloud Computing



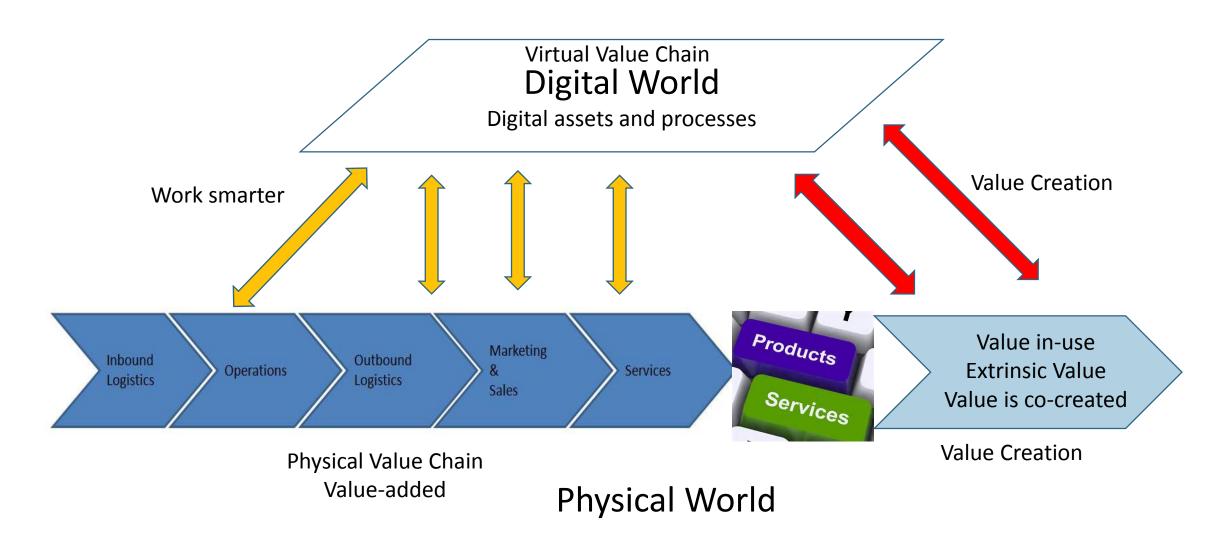
Sources: Images from Yahoo.com

The Smart Service System Has 3 Components

External Cyber **Systems** Application and Model **Data Services** Software Analytics Defined Physical **OT Network** Hardware Defined

- Physical World with IoT Hardware
- Cyber World with Software and Applications
- Intelligence with Data and Analytics

Extending Customer Value Beyond Value Chain



Intrinsic Value



Product-centric

Source: https://assets.hemmings.com/

Extrinsic Value



ปลอดภัย

Status symbol

ทำให้รู้สึกดี

ปั้มน้ำมันทั่วประเทศ เดินทางได้สบายใจ

Customer-centric

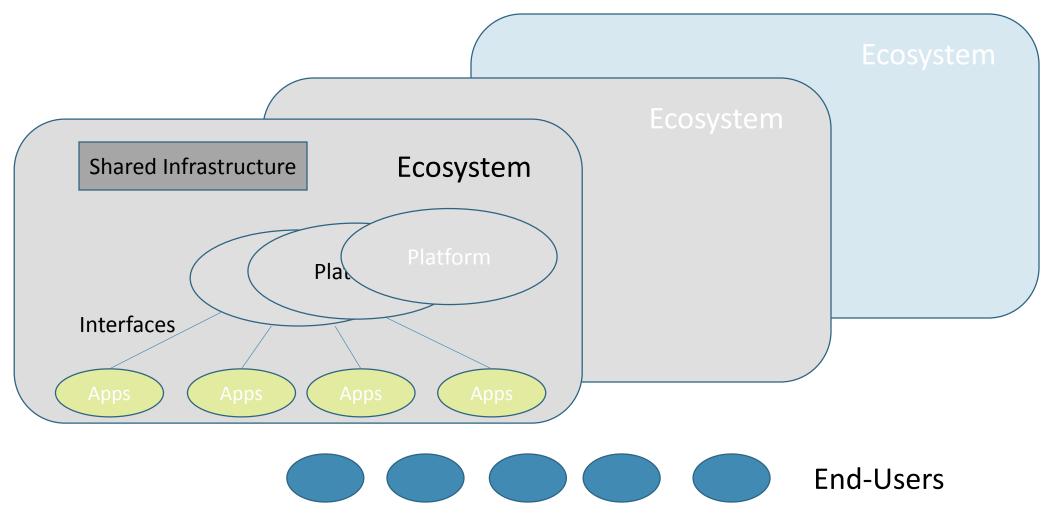
Digital service Innovation

- Digital Layer เป็นที่เกิดนวัตกรรมใหม่ ๆ เกี่ยวกับบริการ Digital Services
- Digital Service ที่ให้บริการบน Digital Layer เชื่อมโยงกับธุรกิจเดิมบน Physical layer (world) นอกจากทำให้เกิด Extrinsic Value ยังสร้างบริการดิจิทัลเชื่อมโยงกับสินค้า เครื่องมือ เครื่องจักร ฯลฯ ทำให้กระบวนการ ทำธุรกิจเปลี่ยนแปลงและ Smart ขึ้น



Source; Google.com

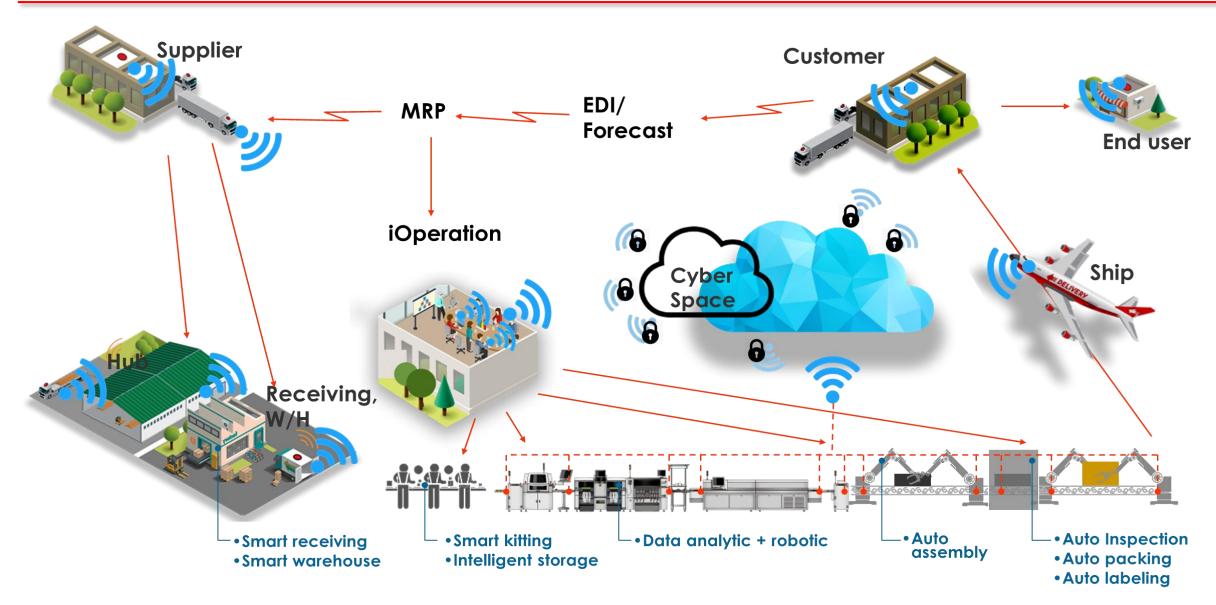
digital Ecosystem



Source: Tiwana, Amrit, "Platform Ecosystems", 2014.

Application of IoT @Celestica





Source: Digital Park Thailand

Action Plan

Center of Data Excellence (CoDE)

5 Digitized Factories 10,000 Farmer gain benefit from improved product yield.

To setting up IoT Cognitive Center for 2 main sectors

- Industrial 4.0 Cognitive Center
- Agriculture 4.0 Cognitive Center (pilot at Cholburi & Rayong)









MODEL DEVELOPMENT KIT

The tools for building analytical models (apps) for the service marketplace



Databases

Repository for storing and managing collections of data



API Management

documenting, and making APIs available, providing access controls and tracking statistics.



Container Orchestration

Automating the deployment, scaling and management of containerized



WEB PLATFORM

The web platform and service marketplace and their source code



Analytics

Finding patterns in data to derive information.



Artificial Intelligence

Cognitive technologies that can understand, reason, learn, and interact like humans.

IoT Platform





Intelligent asset management

Improve labor utilization and reduce inventory with optimum balance



Cognitive Business Process

Apply analytic and cognitive capability to inspection processes and predictive maintenance and supply chain

Machine Vision in Agriculture

Reliable, high speed imaging based solutions for indus Applications in advisory, early warning, compliance

IBM Watson IoT



- Detect anomalies in images and video in industry applications
- Ex: Detect disease coloration in leaves
- Ex: Detect incorrect or incomplete contract work (such as painting)



Count

- Estimate the number of trees Single or Multi-spectral in the area
- Estimate number of fruits in the image





image analysis to measure properties of material







!Locate and Track

- Track weather phenomenon such as clouds
- Forecast weather parameters









Thank you for your attention