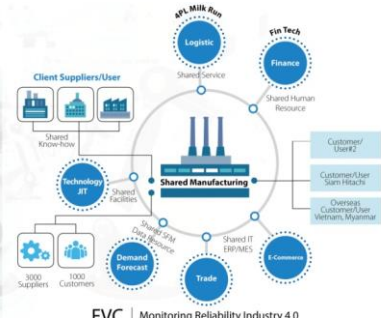


# Shared Factory in Thailand

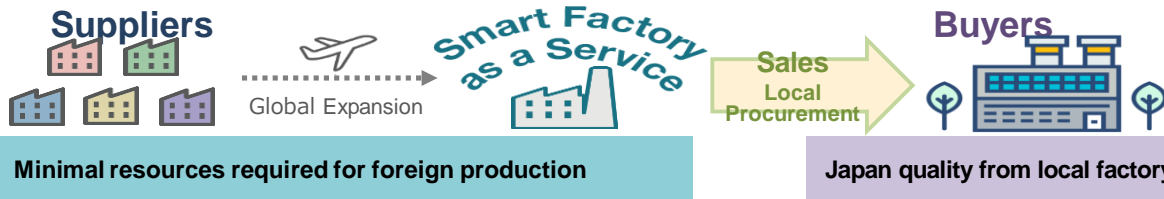


18<sup>th</sup> December, 2018  
Hitachi High Technologies Corp.

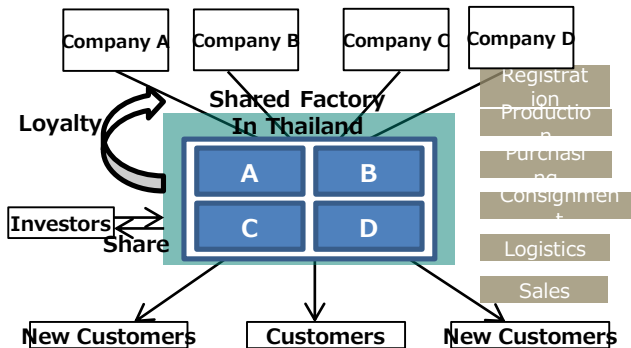
# 1. Smart Factory as a Service

## ■ SFaaS(Smart Factory as a Service)

Hitachi High-Technologies' Smart Factory as a Service (Hitachi SFaaS) supports overseas production, with Hitachi's leading IT/IoT technologies and rich foreign business experience.



## ■ Shared Factory SFaaS enables shared operation

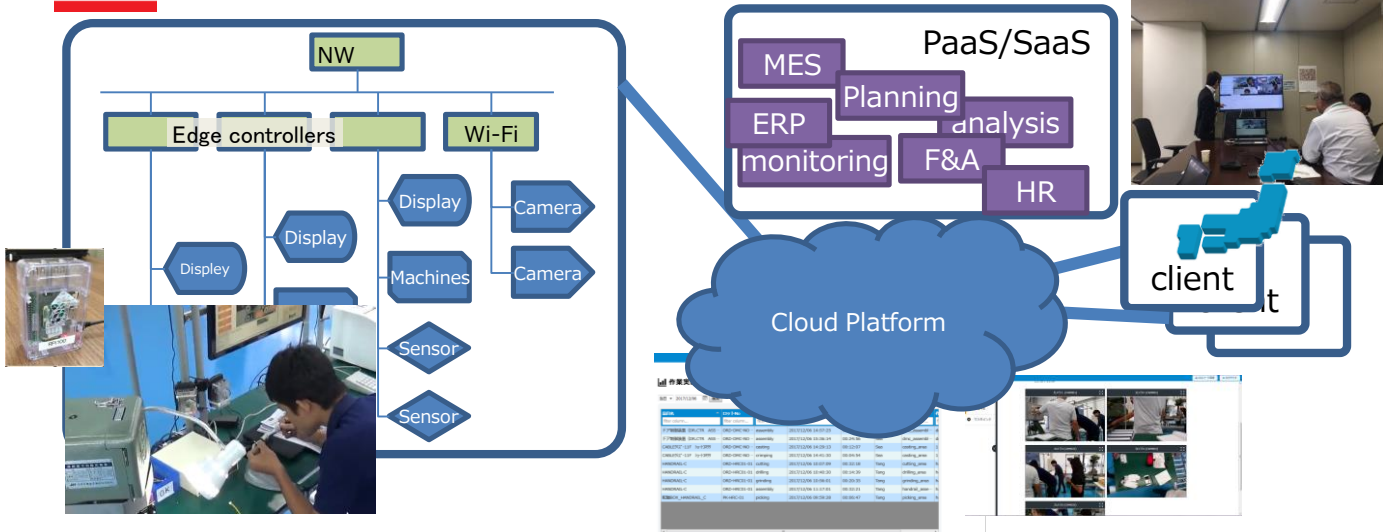


Service Menu	
<b>Startup Support</b>	
Technology Export	Registration, IP
Prototype Production	
<b>Outsourcing Service</b>	
Purchase	Accounting
Logistics	Human Resources
Operations Management	
Sales	
<b>Reinforcement</b>	
Marketing	Supply Chain Finance

# 2. Smart Manufacturing



Hitachi Hightech Amata Smart Services Co., Ltd



- Digital Data and Moving picture captured by IoT sensors and multi function cameras are stored in Cloud Platform.
- Client Manufacturing Partners can access the data to monitor and instruct operators from abroad.

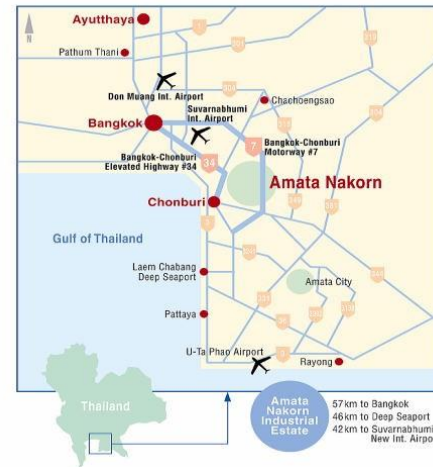
High Level Operations, Quality, & Facility Management in minimum costs.

# 3. Outline of Field Traial

Period : October-December 2017 **2017年10~12月**

Place : **Amata Nakorn Industrial Estate**  
**Rental Factory (2600 sqm)**

Sponcered : 「日ASEAN新産業創出実証事業」



**JETRO**  
日本貿易振興機構(ジェトロ)

Partners		Roles
Srithai Engineering	Thailand	Process Technology
Trigo Quality Service	Thailand	Dispatch Operators
Amata Corporation	Thailand	Rental Factory & facilities
Shirokuma	Japan	Process Design and control
Toho Shokusan	Japan	
Hitachi High-Technologies	Japan	Project Management



# 4. Objectives of the study

Verify whether Shared Factory will minimize the resources necessary to enter overseas market

	Plan	Means	Target
<b><u>Vaildity In Production</u></b>	<b>Prototype</b> <ul style="list-style-type: none"> <li>DMC Unit 20 pcs</li> <li>Handrail 50 pcs</li> </ul>	Prod. Line	Achieve prototype production plan
	<b>Quality</b> <ul style="list-style-type: none"> <li>Meet requirements by Customers / Partners</li> <li>Inspected by partners</li> </ul>	Prod. Line	Minimum Failure Rate
	<b>Operations</b> <ul style="list-style-type: none"> <li>Efficiency of local production</li> <li>Standard time by local operators</li> </ul>	Prod Line	Standard Time 120% or less compared with ST in Japan
	<b>Infrastructure</b> <ul style="list-style-type: none"> <li>Temperatures, humidity, stability of power ...</li> </ul>	Machines	Within Spec
<b>Environment</b>	<ul style="list-style-type: none"> <li>Temperatures, Humidity, air quality, oscillation, ..</li> </ul>	Prod Line	Comply with Thai regulation
<b><u>Validity of IoT Technologies</u></b>	<b>Hardware</b> <ul style="list-style-type: none"> <li>IoT Device connection and successful transmission</li> </ul>		Devices 100 devices in Wi-Fi
	<b>Real Time</b> <ul style="list-style-type: none"> <li>Real Time uploading (moving Picture)情報即時アップロード (15fpsHD動画含む)</li> </ul>	Collected data	Time lag Max 5 sec
	<b>Reliability</b> <ul style="list-style-type: none"> <li>Backup system to enable autonomous operation</li> </ul>	Operation analysis	Max 24 hours
	<b>Maintenance</b> <ul style="list-style-type: none"> <li>Availability of spare devices/ parts</li> </ul>	System Check	Yes/No
<b><u>Operational Support</u></b>	<b>Registration</b> <ul style="list-style-type: none"> <li>Registration and set up operation</li> </ul>	Consultants	Find issues & Solutions

DMC Units for Elevators



Handrails for Elevators



## 5. Lessons and Suggestions

### Issues:

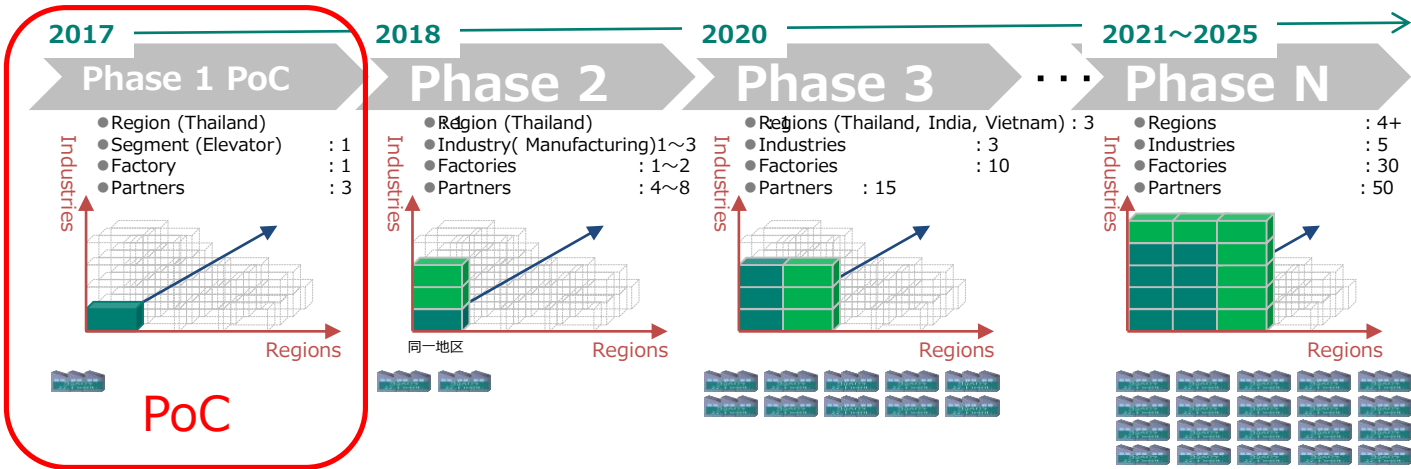
- ✓ Improvement of Digital Instruction
- ✓ Training Operators
- ✓ Complete Process Flow for Mass Production
- ✓ Develop crisis management

### Regulations:

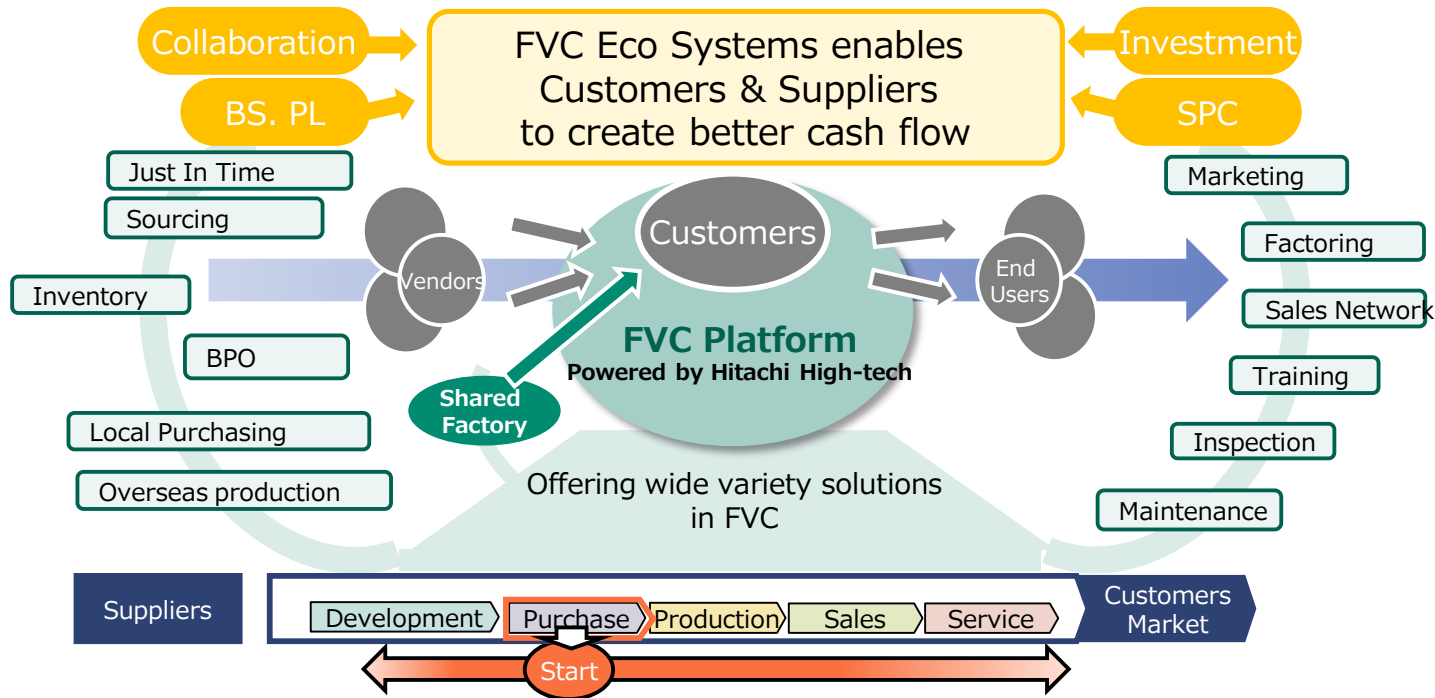
- ✓ Multiple Licences for sharing operations
- ✓ Incentives to introduce IoT systems

# 6. Roadmap

- ✓ After PoC, establish New JV Company (Phase 2)
- ✓ Further expansion in other segments, industries and regions (Phase N)



# 7. Future Value Chain Eco System



*New Platform powered by IoT Systems and Data opens new era.*

- Lumada, Hitachi's new IoT Platform combines systems and data among Logistics, Finance, Manufacturing, Procurement and Trade as high reliability and efficiency.