Course Title
   IoT Wireless & Cloud Emerging Technologies

❖ **Modules**

- 1. IoT Business & Products
- 2. IoT Architecture & Technologies
- 3. IoT Networks
- 4. Wi-Fi & Bluetooth
- 5. Cloud Technology
- 6. IoT Bluetooth & Wi-Fi and EC2 Cloud Projects

IoT Business & Products

IoT Business & Industry Domains

IoT Business & Industry Domains

❖ IoT (Internet of Things)

- IoT networking
  - Connects Things, People, Applications, Data
  - Connects through the Internet
  - Enables remote control, management, and interactive integrated services
- IoT Network Scale
  - Number of mobile devices will exceed the number of people ($\approx$7.6 Billion) on Earth
  - Predictions are made that there will be 50 billion 'things' connected to the Internet by 2020

IoT Business & Industry Domains

❖ IoT Service Support

- Some advanced IoT services will need to collect, analyze, and process segments of raw sensor data and turn it in into operational control information
- IoT Network Scale
  - Some sensor databases may have massive sizes (due to large number of IoT devices)
  - IoT databases will need Cloud Computing support
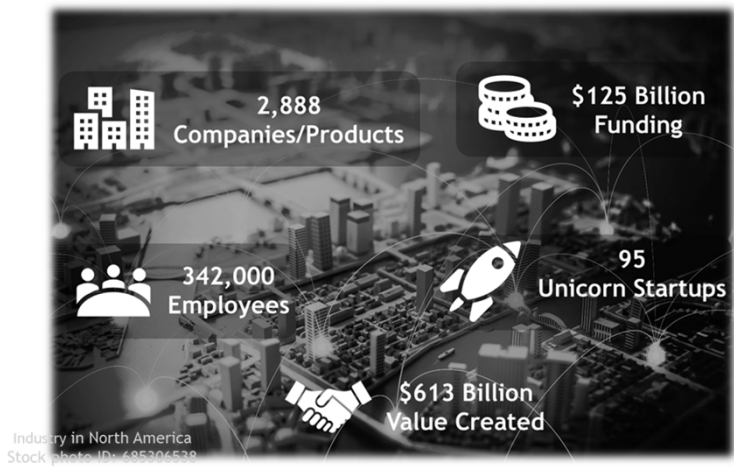 - IoT data analysis will need Big Data support

IoT Business & Industry Domains

❖ Influence of IoT

- **People**
  - More 'things' can be monitored and controlled
  - People will become more capable

- **Process**
  - More users and machines can collaborate in real-time
  - More complex tasks can be accomplished in lesser time

- **Data**
  - Collect data more frequently and reliably
  - Results in more accurate decision making

- **Things**
  - 'Things' become more controllable
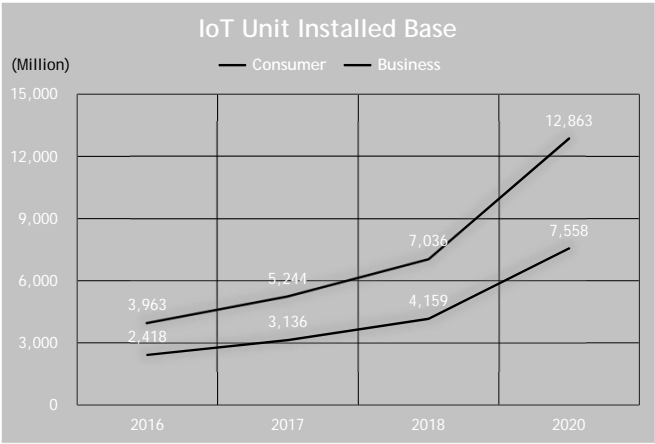 - Mobile devices and 'things' become more valuable

IoT Business & Industry Domains

❖ North America IoT Market & Industry

Source: John Koetsier, "IoT In The USA: 3,000 Companies, $125B In Funding, $613B In Valuation, 342,000 Employees"
July 10, 2017, Forbes. https://www.forbes.com/sites/johnkoetsier/2017/07/10/iot-in-the-usa-3000-companies-125b-in-funding-613b-in-valuation-342000-employees/#67c322d33ef5

IoT Business & Industry Domains

❖ IoT Market and Industry

IoT Unit Installed Base

(Million) — Consumer — Business

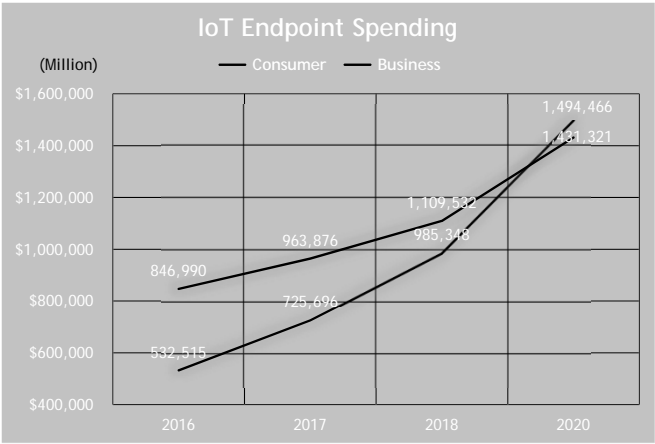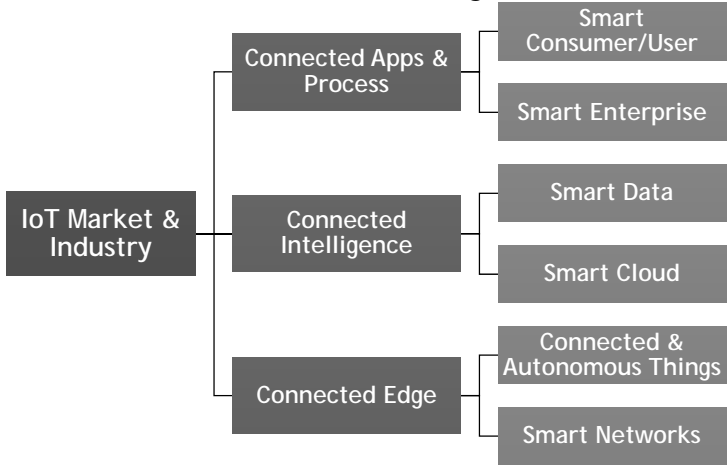|			
15,000			
12,000			12,863
9,000			
		7,036	7,558
6,000	5,244		
3,963	3,136	4,159	
3,000	2,418		
0			
2016	2017	2018	2020

Source: Rob van der Meulen, "Gartner Says 8.4 Billion Connected "Things" Will Be in Use in 2017, Up 31 Percent From 2016," Feb. 7, 2017, Gartner. https://www.gartner.com/newsroom/id/3598917

IoT Business & Industry Domains

❖ IoT Market and Industry

IoT Endpoint Spending

(Million) — Consumer — Business

$1,600,000			1,494,466
$1,400,000			1,431,321
$1,200,000		1,109,532	
$1,000,000	963,876	985,348	
846,990			
$800,000	725,696		
$600,000	532,515		
$400,000			
2016	2017	2018	2020

Source: Rob van der Meulen, "Gartner Says 8.4 Billion Connected "Things" Will Be in Use in 2017, Up 31 Percent From 2016," Feb. 7, 2017, Gartner. https://www.gartner.com/newsroom/id/3598917

IoT Business & Industry Domains

❖ IoT Market and Industry

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IoT Business & Industry Domains

❖ IoT Market and Industry

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- Connected apps & process

IoT Business & Industry Domains

❖ IoT Market and Industry

- Connected intelligence

	Big data	Data security	AI & Machine learning
Smart Data	Experian mongoDB	IRONKEY GUIDANCE SOFTWARE (G)	Google Brain DATASIFT NVIDIA
	Cloud life cycle	Event & Cloud integration	Data center
Smart Cloud	AppDirect docker	APPIRIO a wipro company DigitalOcean snapLogic	RFCODE REAL-TIME DATA CENTER SOLUTIONS peak 10 DATA CENTER SOLUTIONS
	Data security	IaaS	PaaS
	Auth0 CODE42	Dropbox servicenow	amazon webservices CloudBees

IoT Business & Industry Domains

❖ IoT Market and Industry

- Connected edge

	Wearables		Vehicles	
Connected & Autonomous Things	androidwear fitbit		UBER TELENAV mapbox	
	Drones	Robots	Machines	
	LOCKHEED MARTIN Airware	liquid robotics rethink robotics	Atmel IMPINJ	
	VPN/Network security		Ethernet Wired	
Smart Networks	BELDEN SENDING ALL THE RIGHT SIGNALS SKYBOX SECURITY		cisco Jasper Aerohive NETWORKS	
	Platforms	Satellites	Wi-Fi	
	samsara BSQUARE MFORMATION	SPACEX Orbital Insight	eero	

IoT Business & Products
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