

Warm up

Project: IoT Product Concept



SUMMARY

In this warm up worksheet, you will explore products and sensors and begin to ideate new IoT concepts. There are three steps.

STEP 1: EXPLORE PRODUCTS

Identify 3 customer products from industry verticals. This will help you become familiar with companies associated with each vertical.

Aerospace & Defense	Automotive	Electronics & High Tech	Industrial	Retail & Consumer	Medical Devices
Raytheon	TOYOTA	HITACHI	JOHN DEERE	COACH	stryker
AIRBUS GROUP	VOLVO VW	intel	YORK	Newell Rubbermaid	GE Healthcare
THALES	SCHAEFFLER	hp	MITSUBISHI HEAVY INDUSTRIES LTD.	Herman Miller	Boston Scientific
NASA	Audi	MOTOROLA	Rexroth Bosch Group	Liz Claiborne	SYNTHES
BOEING	HYUNDAI	SAMSUNG	ITT	adidas	Medtronic
LOCKHEED MARTIN	TRW	DELL	TurboCare	JCP	COVIDIEN
BAE SYSTEMS	Continental	lenovo	Babcock Power	MOEN	Abbott
EMBRAER	FAW	TOSHIBA	IR	patagonia	Alcon
U.S. ARMY	DPV PIAGGIO		CATERPILLAR	LANDS' END	ST. JUDE MEDICAL
Honeywell	HARMAN		HELLER ABB	Whirlpool	PHILIPS
BOMBARDIER AEROSPACE	POLARIS		manitowoc	Limited brands	
			FRIMO ENGINEERING	BLACK&DECKER	
			Schneider Electric		

After researching companies and their associated products, fill in your findings in the table below.

Vertical	Companies	Products
Aerospace & Defense	1. Honeywell 2. Bombardier Aerospace 3. Boeing	1. Home & Building Control 2. Aircraft 3. satellite
Automotive	1. schaeffler 2. Toyota 3. continenta	1. rolling bearings 2. engines 3. powertrain
Electronics & High Tech	1. hitachi 2. hp 3. lenovo	1. Freeze 3. Printer 4. Laptop
Industrial	1. John Deree 2. Turbo care 3. rexroth	1. Tractors 3. boat 4. Industrial Hydraulics
Retail & Consumer	1. Black & Deker 2. Whirlpool 3. Moen	1. Lawn and Garden accesories 3. Washing machine 4. bathroom shower
Medical Devices	1. Synthes 2. Abott 3. Phylips	1. Headless compression screw 3. ebasil 4. Mircrowave

STEP 2: DATA & SENSORS

Products can share data. In order to get familiarized with the possibilities, examine the table below which list out a variety of natural phenomena such as movement and the associated sensors and data you can collect.

Phenomena	Sensors	Data
Motion	Accelerometer GPS Gyroscope	Position Velocity Acceleration
Forces	Force transducer Pressure transducer	Force Pressure Moment Torque Stress Strain
Location/Position	GPS Gyroscope Electronic compass Proximity sensor	Absolute position Relative position
Heat	Thermocouple Digital thermometer Radiation sensor	Temperature Heat flux Conduction Convection Radiation Insulation
Light	Photovoltaic cell Light meter Video camera Camera Autofocus	Wavelength Intensity Color Optics Amplitude
Flow/Pressure	Flow meter Pressure sensor	Laminar Turbulent Flow rate
Electricity	Volt meter	Current Voltage Resistance Impedance Signals
Sound	Microphone Decibel meter	Intensity Frequency Amplitude Source
Chemistry	pH meter Thermocouple	pH Concentration Reaction energy Reaction rate

STEP 3: MASHUPS

Now create a list of smart connected product ideas by combining one product from your verticals list with one data type from the sensors list to create a smart connected product.

Identify what capabilities this would enable for the user and/or manufacturer and what knowledge you could learn from collecting data over time.

Product	Data Type	Capability (modify product behavior)	Knowledge (Learn from stored data)
<i>Example Cell phone</i>	<i>Signal intensity</i>	<i>Display a map of local area showing signal strength</i>	<i>Learn about cell phone demand in local areas during time periods in the day</i>
<i>Example Home Heating</i>	<i>Temperature using a thermostat</i>	<i>Turn heater and AC on and off</i>	<i>Make the system more efficient over time</i>
1. Printer	Video camera	Printers that can tell you in advance that when your cartridge will be over.	We can take more advantages of printer by this way.
2. Washing machine	Photo voltaic cell	Solar washing machine	Data can be useful.
3.			