Gartner says:

"World will need 300,000 IOT developers by year 2017. Anything we buy that costs over $100 will be IoT enabled by 2018"

Gartner is the same company which predicted in 1992 that India will become an IT superpower by 2015 with exports of over $100 billion. Many people laughed at them at that time. We crossed $100 billion exports in 2013.

We, at Axelta, have launched this Training cum BootCamp to play our part in making India IoT superpower and enable you to build your career in IoT.

Our Training Approach and Methodology:

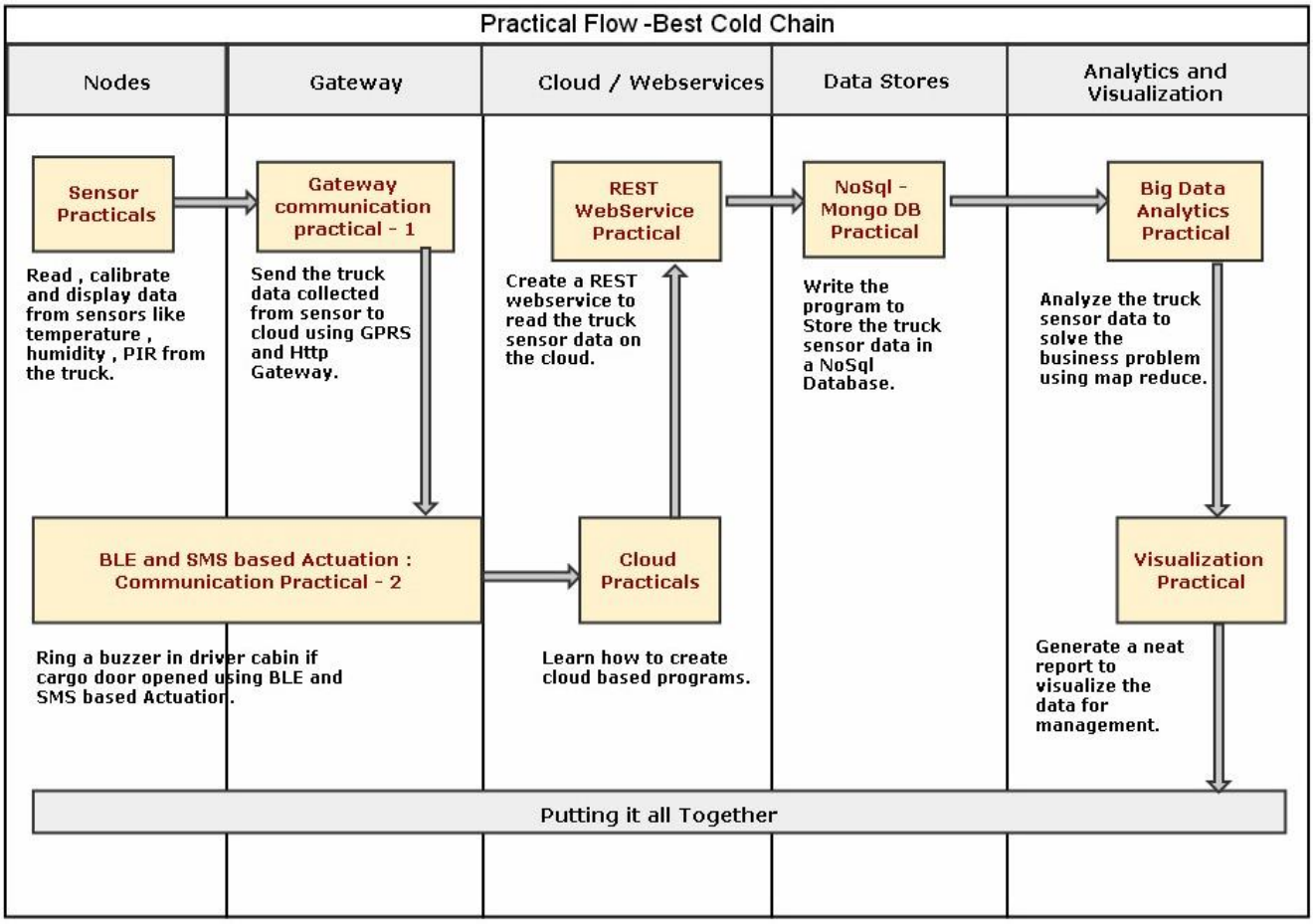
We start from the very Basics, what is IoT, IoT Ecosystem, IoT opportunities and go on to cover the entire spectrum of IoT technology. Since IoT involves a unique combination of multiple technologies dovetailing seamlessly, it is critical to understand the interactions and combination of Hardware and Software technologies to get a complete perspective.

That is why the entire training is based on experiential learning and case study driven. We use a live and actual business problem to go through the drill. At the end of 2 days, participants are able to build an end-to-end solution including the hardware and software side of IoT. They actually create **the IoT device**to solve the Business problem and experience the power of IoT.

The Business Problem:

A Company called "Best Cold Chain" provides logistics services for transporting perishable material across India using its refrigerated trucks. They are having the problem of large penalties being imposed because of delay in material delivery, material damage, and material being stolen.

The Solution involves creating the IoT device and creating the IoT ecosystem to resolve their challenge end to end. Please see below the diagrammatic representation of the same.



Below is the detailed TOC of the steps we take to help solve the Business problem and give you the in-depth IOT understanding.

IoT Expert - 2 day course			
Day 1			
Session #	**Topic**	**Duration**	**Detail**
1	IoT Overview	90	• Introductions, Why IoT. What is IoT, Market opportunity, size. • Domains and examples. Wearable devices, home automation, etc.
	Architecture and Tech Stack Overview	45	• Introduction to different components of the solution and their contribution. • Security aspects. Different technologies used for the solution and why. Alternatives available.
	Tea Break	10	
	IoT World What's happening in the Industry	45	• Latest updates in the IOT industry. • Available IOT alliances details and the standards that are getting evolved. • Multiple IOT applications and solutions available in market. • Multiple IOT platform (hardware) example ARM Mbed, Intel, Freescale etc., comparison and usage. • Multiple IOT software and cloud platform, Components of a Platform, Usage, comparison. IOT eco system, builds around these platforms. OSMOSIS platform and our experience about IOT platform building. • Details about your OSMOSIS IOT platform. • Wearable IOT devices – what is happening in this area.

			• Testing IOT devices.
	Best Cold Chain- Business problem that is solved in this bootcamp.	15	• Best Cold Chain – Trucking company carrying perishable items. • Introduction to the problem statement and how the problem is solved using IOT and its benefits. • Types of sensors used and what is the data captured.
	Lunch	45	
2	End to End solution demo on the Best cold chain.	30	• Capture Vehicle information using sensor and gateway • Pass information using gateway to OSMOSIS Cloud based platform. • View Vehicle information in the OSMOSIS Dashboard. • Understand Triggers and Business rules, Notifications • Trigger Notification from Platform and actuate Alarm in Driver cabin using BLE (Blue tooth Low energy).
	Introduction to Sensors – Theory	30	• Different sensors available and their application in different domains. Challenges with sensors. • Identifying a good sensor • Powering options. Show each sensors including Electric current, electric potential, magnetic and radio sensor.
	Best Cold Chain – Capture data from **Sensors**- Practical	30	• Introduction to **Arduino**. • Connect **a temperature, Humidity, LDR, PIR, Door status sensor** and display data on Arduino Board. • Write the program to read the sensor data.
	Tea Break	10	
3	Communication – Theory	45	• Introduction to communication architecture- Network protocol stack • Different protocols • RF: ZigBee, Blue Tooth, BLE, Zwave, Mesh network. • Communication Channels: GSM/GPRS, 2G, 3G, LTE, WiFi, PLC • IoT protocols: MQTT/MQTTS, CoAP, 6LoWPAN, like TCP, UDP, HTTP/s. • Comparison of the different IOT protocols, advantages and disadvantages (limitations) of these IOT protocols. • IPv4 addressing problem for IOT and introduction to IPv6 IPv6 is required to address more devices. • Application issues with RF protocol - power consumption, LOS, reliability. Security aspects. Showcase the GSM module.
	Programming, Microcontrollers and PCB Theory	15	• Programming – Theory Programming languages used for firmware. • Introduction to other options and trade off analysis for them. Different versions, IDEs, etc. Loading of firmware on microcontrollers. • Introduction to developer board. Its different pieces • Introduction to basic open source platforms. Show ARM, Arduino and 4051 boards.
4	Send Sensor data to cloud using **GPRSand HTTP -** Communication Practical -1	30	• Read data from sensors, • CreateJSONObject • Establish HTTP connection using GPRS • Send JSON data to OSMOSIS Rest API over HTTP
	Trigger alarm in Best Cold Chain driver cabin using **BLE and SMS** based **actuation** - Communication	30	• Create business rules in Osmosis for Best Cold Chain alarms(each node) • Trigger Alarm through SMS via Gateway. • Use BLE Transmitter at gateway for transmitting Alarm to Receiver BLE at Node.

	Practical – 2		• BLE triggers Alarm at Node remotely • Develop code for reading SMS, communicating through BLE and trigger the Alarm.
• Day 2			
Session #	**Topic**	**Duration**	• Detail
5	Recap of IOT and Day 1 courses	15	• Quickly go through 1st day's course and recap.
	Cloud – Theory - AWS	20	• Cloud computing concept. • Benefits of Cloud computing and Axelta experience • Different cloud deployment models • AWS services • Leveraging AWS for startups. Using free tier
	Introduction to virtual environment on **Amazon web service** cloud.	15	• Participants get access to virtual machines on Amazon web service cloud and get familiar with the same.
	AWS Cloud- Practical	30	• Learn and Deploy sample application on EBS instance of AWS • Learn and Deploy sample application on RDS instance of AWS
	Tea Break	**10**	
6	Big Data and Analytics – Theory	30	• Significance of Big Data in IoT • Generation of Big Data and relevance to Machine generated data • Introduction to different data stores and their application for different needs. Like MongoDB, Neo4J, HBase, Redis, etc • Applicability of different data stores based on use cases • Overview of the data stores used in Axelta platform and learning's • About different levels of analytics • Visual analytics. JasperReports, Tableau, D3, etc • Tools and technologies used in analytics. Introduction to Hadoop ecosystem
	REST Web Services – Theory	20	• Introduction to web services, RESTful concept, technologies and how they have been used in the demo. • Different web service technologies and application • Advantages of REST API based solutions for IoT • Concept and usage of JSON. • Concept of stateless services, etc.
	Store Best Cold Chain Vehicle sensor data into **NoSQL MongoDB** - Practical	20	• Start Mongo DB (Big data) and store sample data • Read Big data from Mongo DB (Big Data) • Store vehicle sensor data into MongoDB
	Stream Best Cold Chain vehicle sensor data using **REST Webservices** - Practical	45	• Create a web service and receive data using device simulator • Stream vehicle sensor data to web service and store in Big Data system
	Lunch	**45**	
7	Resolve Best Cold Chain business problem using **Big Data analytics** – Practical	40	• Execute analytics to solve specific business problem as defined in the best cold chain use case. Using map reduce and other tools.
	Visual analytics for Best Cold chain	30	• Visualize trends using big data analytics for best cold chain use case using NVD3 / D3

	Business Problem - Practical		
	Vehicle Status **Android Mobile App** - Demo	30	• Role of Mobile in IOT ecosystem. • Demo of Axelta Vehicle status tracking App • Code Walkthrough
	Tea Break	**10**	
8	Quiz	30	• Open Quiz to recap IOT end to end technology and landscape.
	Business / Career Opportunities in IoT/Ideating	30	• IoT Ecosystem. Development in the space. Opportunities and way forward.
	Feed Back	15	• Feed Back on the bootcamp and work out next steps.

FAQs

Q1. How do I register for the Bootcamp / Training?

For registering please send following details to us at corporate@axelta.com

1. Name:
2. Educational Background:
3. No of years of experience:
4. Technologies you have experience on:

Or you can register online through our IoT Academy page - http://axelta.com/AxAcademy.php

Seat will be confirmed only after paying INR 6000/- into our account. Remaining amount can be paid by Cash at the start of the Boot Camp.

Q2. What is the cost for this Boot Camp?

Ans : Right now we are doing BootCamp's in Bangalore and Hyderabad. `It covers the 2 days Boot Camp classroom training, hardware, software, lunch and snacks.`

Cost of the Boot camp in **Hyderabad** is: INR 9,000

Cost of the Boot camp in **Bangalore** is: INR 10,000

Q3. How can I pay for this Boot Camp?

Ans: Payments for this can be done through a direct transfer to our ICICI bank account. Following are the details of the account.

ICICI Bank

Axelta Systems Pvt Ltd

A/c no – 000805014884

Khairatabad Branch, Hyderabad [IFSC Code – ICIC0000008]

For more information, contact us at: +91-9949923705, +91-9908112221

Q4.What is the Location of this Boot Camp?

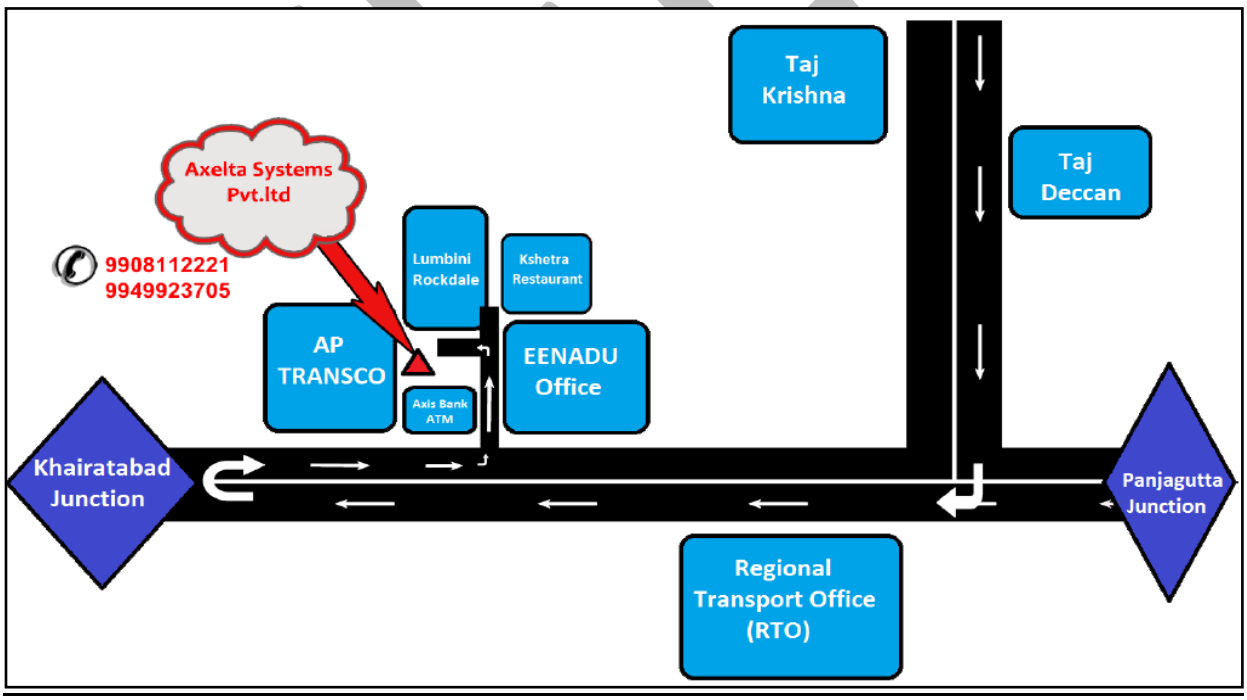
Ans:
Currently we are holding the BootCamp's sessions in Hyderabad and Bangalore. Dates will be confirmed shortly. The location for Hyderabad and Bangalore is mentioned below.

Hyderabad:
Address:
Axelta Systems Pvt. Ltd
H. No: 6-3-571/a/12,
2nd Floor, Suhana Rockdale,
Somajiguda, Khairatabad
Hyderabad - 500 082.
Telangana, India.

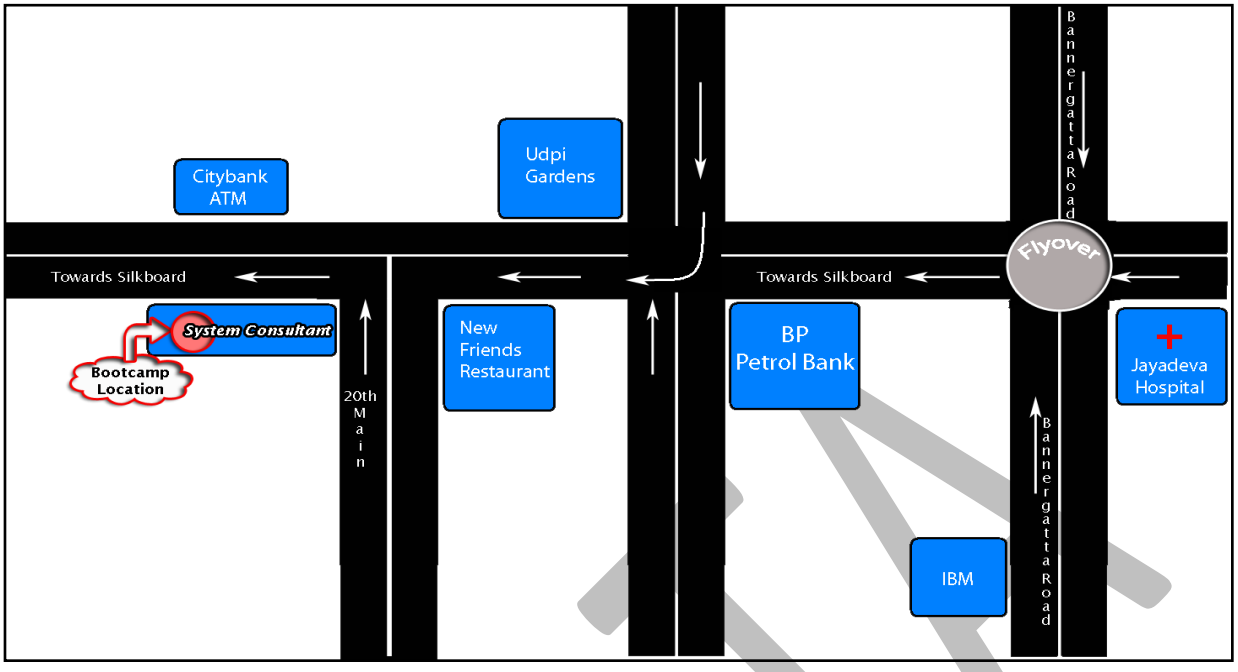
Bangalore:
Address:
Vinsys IT Services (I)Pvt.Ltd.(System Consultant is now Vinsys)
1st stage BTM Layout, 20th Main Road,
100 Ft Ring Road, Near Friends Restaurant,
Bangalore-560078.

Mobile: +91-9949923705, +91-9908112221
Email id:mailto:corporate@axelta.com
Website: http://www.axelta.com

Route Map for Hyderabad Location:



Route Map for Bangalore Location:



Q5. Who will benefit from this program?

Ans. Internet of Things is applicable to all verticals and specializations. That's the beauty and attraction of IoT. Some of the people who can make the most from the program are.

• **Students:** Who are looking to build a better career in technology. There is going to be a very high demand for people who have knowledge and the ability to contribute to IoT projects in the organizations. This program helps them develop an understanding that they can further deepen through learning and experimentation to ride the IoT wave.

• **Govt/PSU:** Employees can take this input and explore how Govt can make a difference in governance using IoT. Given the vast application of IoT in social sector, healthcare, environment, smart-city and quality management there is a huge scope for Govt employees to experiment and implement and propose new schemes.

• **Software professionals:** Who are looking to expand their horizons by getting hands-on exposure to latest technologies like Big Data, Analytics, Mobile computing, Cloud computing, etc. along with in-depth understanding of IoT. Most IT companies have started their IOT competencies and this training will be a very good career booster for them.

• **Electronics engineers:** Who are aware that a golden period is coming for them soon and want to reach out beyond their current scope that limits them to just electronics. Getting an understanding of the electronic side of the IoT technologies and standards and also getting an exposure to the cloud / software side of things will enable them to play a key role in time to come when the demand for electronic engineers with IoT experience and knowledge will skyrocket.

• **Existing or Budding Entrepreneurs:** Who have any IoT ideas (e.g. Remote controlled things, home automation, wearable tech devices, etc.) that they would like to bring to a reality. They will get a very good understanding of all technologies and most importantly, how these technologies work together to make it

possible. They will also get technical support from Axelta experts and limited period free access to Axelta Osmosis platform to experiment and build their solutions.

• **Industry professionals:** Working in pharmaceutical, real estate, manufacturing, electrical, retail, healthcare and a number of other verticals and businesses who are foresighted to see the disruption that it will bring in the way their business operates in the near future and want to be the early adopters or change agents in their respective industries. Through the insight that they build on the working and the possibilities of IoT, they can spearhead the adoption of it in their business areas.

Q6. What are the prerequisites for the boot-camp?

Ans. There is no specific pre-req. The tutorials and sessions have been structured in a manner that anyone with zeal to learn can go through them. Our experts will help you understand the end to end IOT. Even if you do not have programming experience, but are technically oriented and a quick learner, it will be worth your time and money spent. The program gets you a conceptual understanding about the Internet of Things and gives hands on experience on different technologies and applications.

Q7. Will I get a job after doing this program?

Ans: We are going to cover multiple technologies like Big data, embedded programming, cloud deployment, analytics, etc and the idea is to give a hands-on understanding on each of these technologies as well as their synchronization. Surely this will provide a window of opportunity in the up and coming tech industry and a huge number of startups coming up in the area. Companies/startups working on wearable tech, etc are looking out for guys trained in IOT as first choice.

Q8. What would be the next steps after the Bootcamp?

Ans. The answer to this can vary significantly based what you intend to do with the competence you build on IoT. Here are some thoughts:

• Software professionals will get a lot of hands on insights on the latest technologies. While they prepare themselves and develop further depth for the IoT wave to hit our shores, they can leverage the insights on specific technologies to further build depth on them and transform their careers in that direction

• Start up enthusiasts and students can immediately get started with implementing their ideas. They can buy our IoT Kit / Osmosis Gateway and with free access to Osmosis Platform, they can start putting together their proof of concept. This is the most time and cost effective way to experiment and convert their ideas to reality

• Govt/PSU employees can take this input and explore how Govt can make a difference in governance using IOT. How better data can be collected using IOT. Given the vast application of the IOT in social sector, healthcare, environment and quality management, huge scope for Govt employees to experiment and implement.

• Industry people can go back and start exploring on ideas through which they can create disruptive innovation in their businesses and work with our consulting / solutions division to develop solutions for their needs

Besides this, we are open to work with passionate people on their ideas and if you are keen on putting further effort in realizing those ideas, we are going to back you up through technical support, mentoring, access to infrastructure, etc. for translating these ideas into a reality.

Q9 .Will the kits will be provides for the Bootcamp?

Ans. Yes, kits will provide for the free of cost for the duration of the boot camp.

Q10. What are the different types of kits and their cost?

Ans: Below is the cost of a kit if you want to own one after the training. It's optional.

No	Kit	Components / Specs	Price [INR]
A1-DB-01	Basic Board	Arduino R3, LCD Shield, LCD, RTC, Remote Control and USB cable	2100
Ax-SB-01	Sensors Board	PIR, Reed, Temp, Humidity, Power and Light	2100
Ax-SB-02	GPS Board		1900
Ax-GW-01	Communication Board	GPRS / GSM - SIM900	1100
Ax-RF-01	RF Board	RF pair, board and LEDs, etc.	500
Ax-B-01	BLE	BLE Single	850
Ax-B-02	BLE	BLE Pair	1700

Q11.Are there any nearby hotels where I can stay?

Ans: The training venue is right there in the Central Business District with a number of business hotels nearby. Here are some of the links to good hotels.

Bangalore:

#148/2, 20th Main Road,

2nd cross, BTM Layout 1st stage,

Bangalore-560029

Contact No: +91 26681189, 26681340, +91 9972102222

http://www.orelinn.com/

Hyderabad:

NKM Grand–Walking distance from the venue

Katriya

Inner Circle

The Park

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