IoT for entrepreneurs

Introduction to the course

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NOTE

for emlyon students: this document does not substitute for the syllabus posted on Brightspace. Please go and read the syllabus.

1. START

Can you guess who opened the annual automotive show in Frankfurt this year?

Sheryl Sandberg, COO at Facebook:

▶ https://www.youtube.com/watch?v=llgCU1lsTI0 *(YouTube video)*

At the heart of this change, there is the fact that objects get **traversed by data**.

It's not just mechanics powered by electricity anymore.

It's mechanics, with computers, software (code), Internet connection and data flowing.

And this is what Internet of Things and smart objects are pretty much about.

This course is designed to make you **touch** this, feel confident about getting a job in this new economy.

2. Who is this course for?

This course is aimed at management students / entrepreneurs / citizens curious about the Internet of Things in a business perspective. No pre-requisite is needed.

A knowledge of coding (in any programming language) would help you understand the part where we will code the object. If you don't know how to code, then copy pasting is ok in this course.

3. Learning objectives

When finishing this course, you will have learnt to:

- create a connected object with a board and a screen, with soldering, able to connect to WiFi.
- write a program to connect to the Internet via WiFi and retrieve an air pollution measure in the location you choose.
- transfer the code to the object: get the object to work.
- understand the business stakes of connected objects, beyond this small object: B2B, B2C, design and security aspects.

4. Material and budget

We will use components to build the object.

emlyon students: these components are provided to you directly so you can skip this section.

At the time of writing, components cost less than 40$ and are sold online by http://www.adafruit.com in the US. For further details, check the lesson "Where to buy components".

We will also need a soldering equipment:

Figure 1. Soldering station

emlyon business school students: you can visit the Makers Labs on our campuses for soldering (have you visited their website?).

Ask the MakersLab manager to use the soldering stations under their supervision.

A soldering station can be bought online (see the lesson "Where to buy components").

Or better, you can find a Makers Lab near you and ask for their help! Check here for a list of Makerslab worldwide.

Finally, you will need a micro usb cable to plug your object to your computer. You probably have one already if you have an Android smartphone. Shapes and formats for micro USB keep changing. Here we need the classic format (so, not reversible) like this one.

5. Organization: this is a blended course

- Lessons are a mix of documents and videos.
- Documents and videos are available on this website: https://emlyon.github.io/IoT4Entrepreneurs/
- So this is "distance learning": build your object by following the videos, read the documents!

Example of a video on the website:

▶ https://www.youtube.com/watch?v=C6vhPETtXN8 *(YouTube video)*

3 in-class sessions: - 1st (today): Introduction - 2nd (check the date on the syllabus): IoT and their business models - 3rd (check the date on the syllabus): business game: how to create economic value with IoT? Using the DATOM method.

6. Evaluation of the course

The evaluation is in two steps:

- GROUP assigment (2 students per group). 50% of the final grade: → a video where you show your object, which should be working. You explain in this video the key difficulty you faced.

Example of a good video:

▶ https://www.youtube.com/watch?v=155B6dSZEfs *(YouTube video)*

Note: to get a 10/10, you need to add a bonus feature to the object.

Examples: extra coding, adding a 3D-printed case…

- INDIVIDUAL assignment. 50% of the grade: → a video where you discuss a connected object on the market (no need to buy it!). You explain 1) the function it performs, 2) the business model behind it, and 3) secuirty issues raised by the object.

Example of a good video:

▶ https://www.youtube.com/watch?v=5TIKaf6hKMg *(YouTube video)*

Grading is as follows:

		Assignment 1 *					
	grade is on on 0 to 20 scale (French grading system)	video not uploaded	video uploaded, object not working, explanations showing you did not do your best effort	video uploaded, object not working, explanations showing you understand why and you did your best effort	video uploaded, object working, bad explanations on how you got it to work	video uploaded, object working, good explanations on how you made it	video uploaded, new features added to the object, great explanations
Assignment 2 **	video not uploaded	0	4	6	7	8	10
	video uploaded, comments are weak on all 3 dimensions	4	6	7	8	12	14
	video uploaded, comments are good on 1 dimension	6	7	8	12	14	15
	video uploaded, comments are good on 2 dimensions	7	8	12	14	15	16
	video uploaded, comments are good on 3 dimensions	8	12	14	15	17	18
	video uploaded, comments are outstanding on 3 dimensions (outstanding means you demonstrate some level of expertise)	10	14	15	16	18	20

* Assignement 1: video showing your connected object, working (powered up with a display on the screen), and with your comments.

** Assignement 2: video showing a connected object on the market, with your comments on 3 dimensions: the technical, business and security aspects of the object

Note for assignment 2: you don't have to buy the object.

Each video should last about 3 minutes and **less than 5 minutes in any case**.

Post the video on **Youtube** only, do not add a password to the video.

Make the video "unlisted" if you prefer.

- **emlyon students only**: write the link to the Youtube video on the Dropbox of brightspace.
- **other participants**: you can send me the links to the videos at levallois@em-lyon.com and I'll be happy to evaluate them.

Don't send me video files as I will not open them!

7. Essential readings and to go further

Access this board on Pinterest for a collection of documents on the Internet of things from a business point of view.

You should read these documents to get a broader view on the subject.

If you look for a very complete, in-depth reference on IoT for entrepreneurs I warmly recommend:

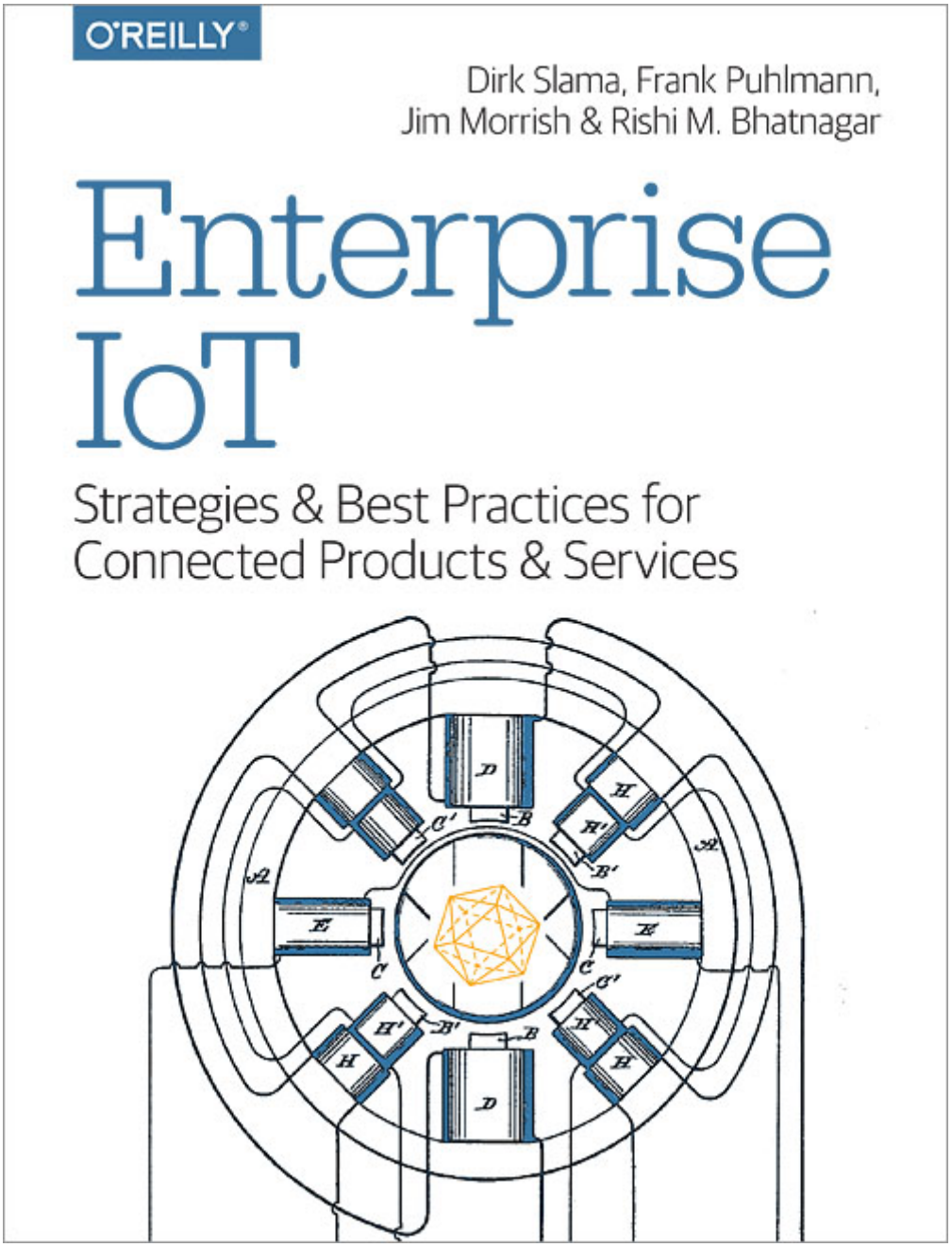

Figure 2. Entreprise IoT

This book is available online here.

emlyon students have access to this book freely through the online library here.

The end

Find references for this lesson, and other lessons, here.

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This course is made by Clement Levallois.

Discover my other courses in data / tech for business: https://www.clementlevallois.net

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