Ecole Polytechnique
Fédérale de Lausanne
EPFL

Creativity and Design on IoT Devices for Global Competitiveness: China Hardware Innovation Camp (CHIC)

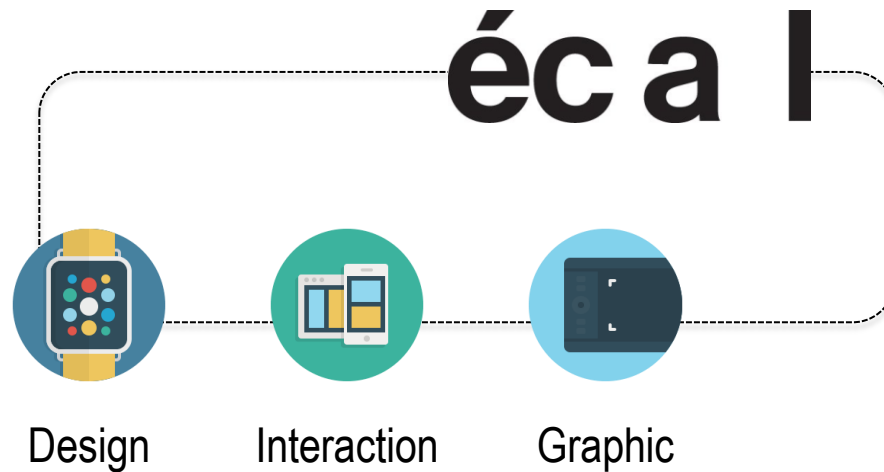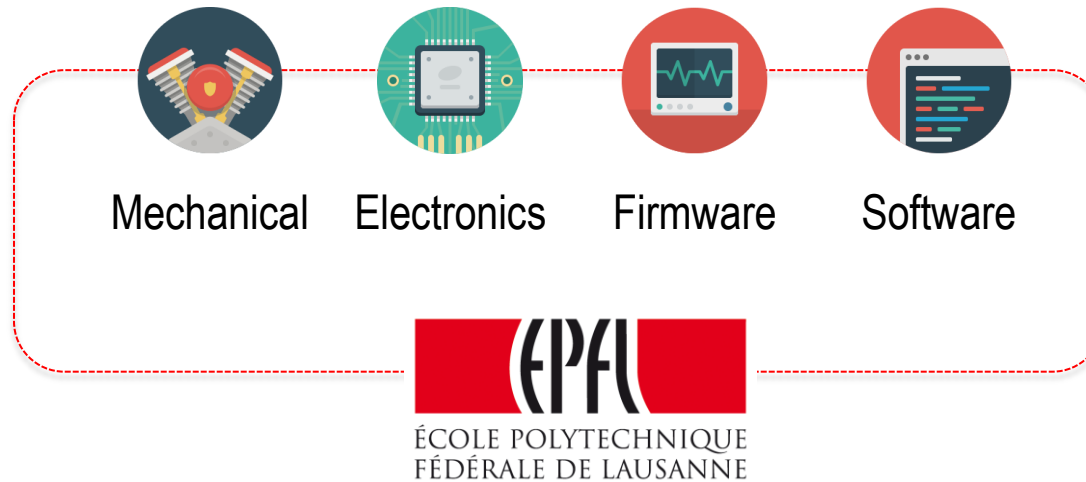Dr. Marc Laperrouza

FHKI IoT Seminar – August 24 2017

Switzerland

Lausanne's schools and skills eco-system

Mechanical · Electronics · Firmware · Software

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éc a l

UNIL | Université de Lausanne

Design · Interaction · Graphic

Business

China Hardware Innovation Camp

DESIGNED IN SWITZERLAND, MANUFACTURED IN CHINA

Concept

Develop a connected device

using open source hardware, open source software and sourcing components from Seeedstudio (+ Adafruit, etc.)

Concept

From idea to prototype in 30 days

functional   working

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Underlying pedagogical approaches

Bottom-up

projects proposed by students

Double interdisciplinarity

within EPFL (IC, STI) and around (ecal, HEC)

Real world, real learning

projects with commercial potential

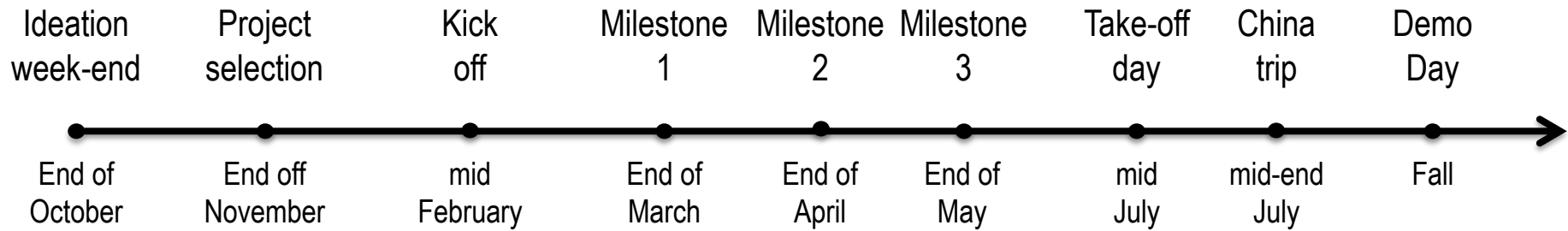Immersion

in the Hong Kong-Shenzhen ecosystem

Reflexivity
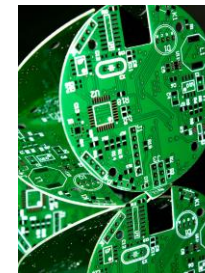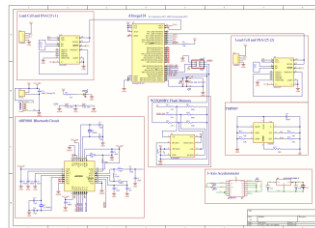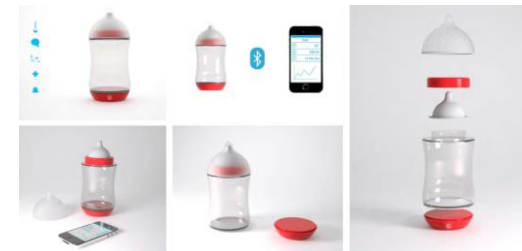
on the flows of goods and knowledge

Timeline

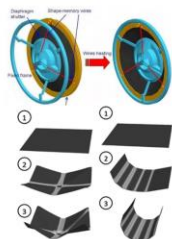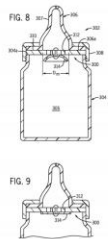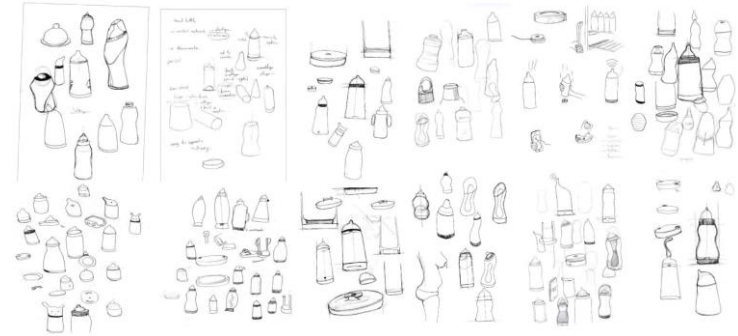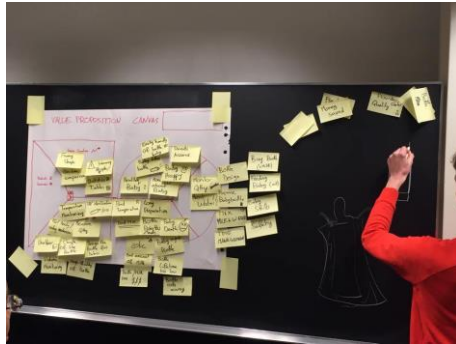| Ideation week-end	Project selection	Kick off	Milestone 1	Milestone 2	Milestone 3	Take-off day	China trip	Demo Day
End of October	End off November	mid February	End of March	End of April	End of May	mid July	mid-end July	Fall

Example of projet in 2015: FiMi – Smart baby bottle

How did they get there….
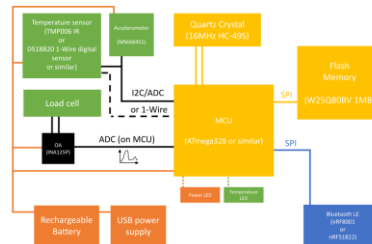
Example of projet in 2015: FiMi – Smart baby bottle

The bottle

Fimi is a smart baby bottle. We created a bottle & a device to facilitate the nutrition of the babies.
The bottle is made of restistant and anti-bacterial material and is easy to handle.
With your fimi, you can know at any time the temperature of your baby bottle as well as the quantity of milk drunk by your baby. Don't hesitate anymore! Pre-order your fimi!

Current Price:
$ 99 for 1 device & 1 bottle
$ 10 for each additional bottle

PRE-ORDER

Upper part of the device
Load cell
PCB
Lower part of the device
Button
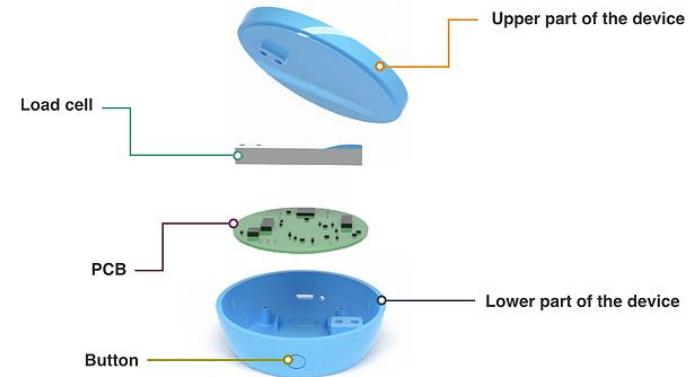
Help
Guide

Chat
Private Tchat
Forum

37°
265ml
Tare

Baby profile
Contact Person (mother, father)
Favorite
Satistics
Health Book
Sharing with family doctor

The app

The application has been thought for the users. The interface is simple: the main screen shows the temperature of the fimi and the quantity of the milk.
We conceived a chat service to communicate easily with your friends and a help section where you will find a guide. Finally, all the parameters of the baby as well as the statistics and other services will help you to care about your baby!

FREE DOWNLOAD (Doesn't work yet)

Project management tools

Coordinator view
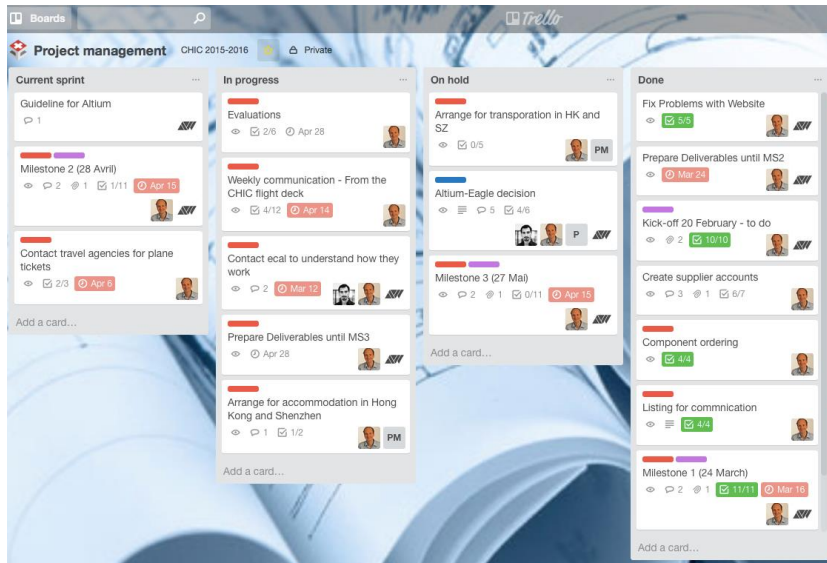
Student view

Processes for whole CHIC cycle

Weekly deliverables + milestones
for each competence

Community platform

Common website

Livelo

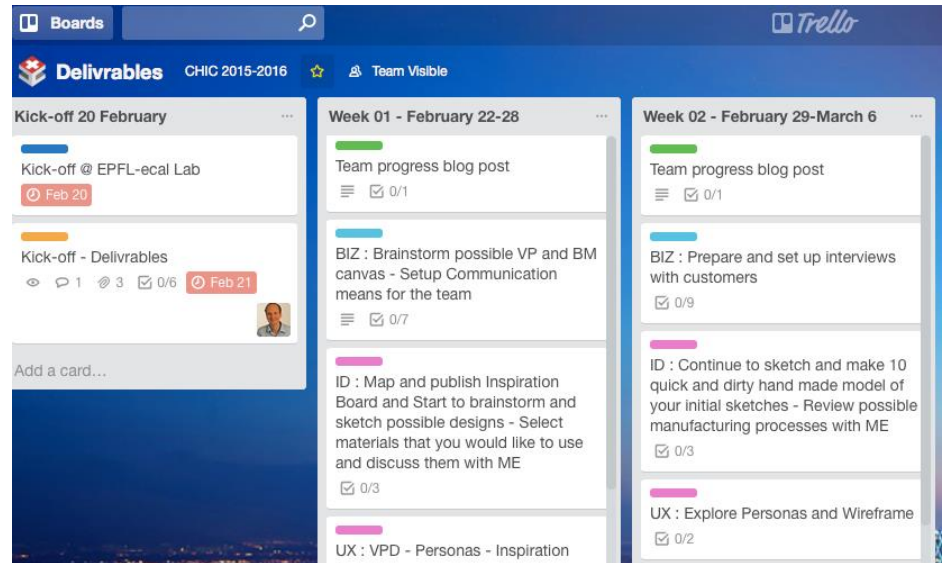A low-priced & connected probe engineered for easy water level assessment.

🏛 EPFL, UNIL, ECAL   📅 2016 - 2017

Trobak, give value to your waste

Trobak is a smart composter that helps you reduce your impact on the planet by sorting your food-waste and turn it into a hea [...]

🏛 EPFL, UNIL, ECAL   📅 2016 - 2017

Todoo

Todoo is the first watch specially designed for children with ASD (Autistic Spectrum Disorder) to help them to get on with th [...]

🏛 EPFL, UNIL, ECAL   📅 2016 - 2017

Ilanga

We are protecting children from risks linked to sun exposure thanks to a connected hat.

Airaware

Our team is composed of four determinate men who are based in Ticino, each with a

Peggy

Peggy is a new type of interactive toy that will teach your children about the value and

Common website

From CHIC to CHIC 2.0

1st edition: 15 students
2nd edition: 60 students interested (25 selected)
3rd edition: CHIC has become a Minor

Now what…..

China Hardware Innovation Platform (CHIP) aka CHIC 2.0

Pilot open to Swiss academic institutions
Discussion to integrate Ivy League institutions

swissnex
China

GEBERT RÜF STIFTUNG
WISSENSCHAFT.BEWEGEN

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In summary CHIC is

Project-based

Inter-disciplinary

Multi-site

Student-driven

Sponsors and partners

Q & A

Journey map: participant

User:
- **Participant**

Stage	Pre-running CHIC		Running CHIC				Post CHIC

Doing — External tasks

Sign up · Prepare project · Learn · Execute project (Trello) — Collaborate, Order components, Contact customers, Work on specific softwares · Interact with community — All CHIC members (Students, Coordinators, Mentors, Alumni) · Create visibility — Post on social media, Discuss with external CHIC members (Customer, Media, …) · Support CHIC teams · Continue his project

User can …	Sign-in	Initiate project	Learn	Execute project	Interact with community	Manage project web page	Support and continue

Front stage	- Log
	- Edit profile (bio, skills, avatar)
		- Learn how to use collaborative tools
		  - Platform
		  - Trello
		  - Google Drive
		- Define MVP and its goals
			- Study relevant topics
			- Get ressources
			- Validate learning
				- Upload tasks
				- Download files
				- Mark progress
					- Provide feedback
					- Receive feedback
					- Suggest ressources
						- Post news
						- Edit content
						- Have followers
							- Provide feedback
							- Receive feedback
							- Get in touch with CHIC community
							- Have backdoor access

We/Platform will … / Back stage	Register users	Explain CHIC tools / guideline	Teach topics	Transfer tasks	Messaging	Manage project team page	Send news to alumni
	Set up role	Generate team building	Monitor individual progress	Upload files		Manage blogging team project	Get in touch with CHIC community
	Send login			Monitor team project progress			Grow CHIC community

Platform, plugins, ..	CHIC Plugin	Google Drive	Multiple				
	WP BuddyPress	WP LearnDash + ProPanel	WP / Others				

Interaction with community:
- Projects, feedback: chi.camp?
- Handling problems, forum: trello all CHIP member?

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