~~Independent Studies IV~~ CERN Spring Campus 2015

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Learnings Report

Abstract—This report is intended to describe in summary the learning acquired during the 2015 CERN Spring Campus with the main focus on the latest technologies and industry trends in IT. This event has brought together experts from CERN, to share on a very open, simple and direct approach in a program of scientific and technological dissemination and cultural exchange.

This is not a summary of the document!

Index Terms—(CERN, soft skills, industry trends, technology).

The document should describe the personal experience and skills acquired!

1 Introduction

The CERN Spring Campus 2015 provided an wonderful school campus in a very friendly environment using extensive scientific terms and thoughts.
The presenters are very competent on their areas but at the same time the message and the way to present very complex and scientific information was done using a very accessible speech and very enthusiastic leaving in our mind the seed for new developments.
I consider the presentations on the campus excellent for my personal development and possibilities to develop and grow on new areas.
The core program consisted of 25 hours of sessions, delivered in English from specialists in their respective fields, covering topics such as:

- Information Technology
- Team work
- Science and society
- Entrepreneurship
- Project Management
- Writing a Curriculum Vitae
- Job Interview Techniques

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2 Motivation

In my point of view European Organization for Nuclear Research (CERN) has a huge and complex using the utmost technology in IT area mainly on the following areas:

- Programming languages, mainly based on Java, PHP, and object oriented.
- Virtualisation environments and cloud, for both processing capacity and data storing.
- The importance of soft skills, not on how to right a CV and how to behave for a job interview, but also good practices at the work environment for a higher productivity.

I was amazed and motivated by the easy way to understand the presenter by the friendly and easy way to present extremely complex and difficult technological infrastructures, which in my point of view comes from CERN culture to share the information and knowledge.
Experiments at CERN generate colossal amounts of data. The Data Center stores it, and sends it around the world for analysis [1], the way this amount of data is stored and shared was one of the mail reasons to

(1.0) Excellent	LEARNINGS						DOCUMENT						
(0.8) Very Good	Context×2	Skills×1	Reflect×4	Summ×.5	Concl×.5	SCORE	Struct ×.25	Ortog×.25	Exec×4	Form ×.25	Titles ×.5	File ×.5	SCORE
(0.6) Good	0.4	0.5	0.5	0.5	0.5		1.0	0.8	0.8	1.0	1.0	0.6	
(0.4) Fair													
(0.2) Weak													

participate on the CERN Spring Campus 2015.

3 KNOWLEDGE SHARING CULTURE

CERN exists to understand the mystery of nature for the benefit of all. Providing a supportive environment for all people contributing to the aims of the Laboratory and developing these people to face the scientific and technological challenges that lie ahead at CERN is key, generating, transferring, sharing and disseminating knowledge and technological development.
This knowledge is currently used all over the world to generate even more knowledge and more dissemination of information, and the provision of advanced training for research workers, with the main goal for technology transfer, education and training at many levels.
The knowledge share principle is diversity of people, knowledge and ideas. People with their diversity brings their unique qualities, different perspectives and creativity.
As example, the invention of the World Wide Web which in it self enables the sharing of information and links to other platforms across time and space. The World Wide Web makes interactions possible which had not existed before its invention at CERN in 1989 by Tim Berners-Lee.
But the legacy of the World Wide Web and its revolution in the sharing of information lives on at CERN. Today, at approximately 600 million times per second and just under the speed of light, particles which form our universe collide within the world's largest machine known as the Large Hadron Collider at CERN when it is running.

4 TEAM WORK

In my point of view, one of the fundamentals to share information and knowledge is split the work among people or have teams.
Other aspect to keep in consideration is productivity.
During the school camp has been presented several tools and ways to increase the performance specially for team work. Agile is the example of a process framework that is currently used on the majority of the Information technology companies all over the world and also is used at CERN.
Agile is based on 12 principles [2]:

- Customer satisfaction by rapid delivery of useful software
- Welcome changing requirements, even late in development
- Working software is delivered frequently (weeks rather than months)
- Close, daily cooperation between business people and developers
- Projects are built around motivated individuals, who should be trusted
- Face-to-face conversation is the best form of communication (co-location)
- Working software is the principal measure of progress
- Sustainable development, able to maintain a constant pace
- Continuous attention to technical excellence and good design
- Simplicity — the art of maximizing the amount of work not done — is essential
- Self-organizing teams
- Regular adaptation to changing circumstance

Several tooling can be used to implement and help the execution of Agile methodology, like Kaban and scrum, which were presented at the school camp.

5 CONCLUSION

"Diverse people bring their unique qualities, different perspectives and creativity" - For me this was the most important sentence I will keep for the rest of my life.
Based on the description provided is clear the CERN has provided an wonderful presentation in a very friendly environment using extensive scientific terms and thoughts, where the knowledge sharing is the fundaments of the CERN culture [3].
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the way to present very complex and scientific information was done using a very accessible speech and very enthusiastic leaving in our mind the seed for new developments.
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ACKNOWLEDGMENTS

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REFERENCES

[1] European Organization for Nuclear Research (CERN). (2015) http//www.cern.ch.
[2] Agile Methodology. (2015) http://agilemethodology.org/.
[3] N. Pinto, *2015 CERN spring campus*, Instituto Superior Técnico, June 2015.

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APPENDIX
STATEMENTS OF EXECUTION

Statements of Execution for the Activity Performed.

CERN SPRING CAMPUS DIPLOMA

This certifies that

Nuno PINTO

has completed the course of study during the 2015 CERN Spring Campus.
The program consists of 25 hours of lectures held over 3 days.

CERN

TÉCNICO LISBOA

The 2015 CERN Spring Campus was jointly organized by the European Organization for Nuclear Research (CERN), Geneva, Switzerland and The Instituto Superior Técnico, Lisbon, Portugal.

Derek Mathieson
Director, CERN Spring Campus
8th April 2015