Innovation and Technology driven Software Engineering

Case Study: Creating the right ecosystem for University Incubators and Software Development Companies in Albania

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Orges ÇIÇO

OUTLINE (I)

- **Incubator**
  - Who we are? Mission and Vision
  - Objectives and Partnerships
  - Services : *Incubation, Professional Training, Bootcamping and Hackathon Events, Tenant*
  - Policies and Admission Procedures
  - Organization Structure – Organigram

OUTLINE (II)

- **Company**
  - Internships and Professional Training Programs
- **Operating Environment**
- **Stated Hypothesis**
- **INOTECH-SE Model**
  - Advantages and Disadvantages
- **Analytical and Quantitative Measures**
  - Statistical Data

OUTLINE (II)

- **INNOTECH-SE ADV/DIS**
- **Conclusions**

WHO WE ARE?

- Incubator of Innovative StartUp Companies inside UMT University
- Metropolitan Incubator represents the FIRST On Campus Incubator amongst Albanian Universities
- Founded in December 2015 as joint initiative of UMT University to create a proper ecosystem for innovative entrepreneurs
- Bringing together University - Industry - Government

MISSION AND VISION (I)

- **Mission** - Constitute the driving force in commercializing business ideas of young entrepreneurs with the primary purpose of

  - Foresting entrepreneurial culture among faculty, researchers, and students at University UMT
  - Creativity & Fair opportunities
  - Incentivize original bright and cutting edge projects only

MISSION AND VISION (II)

- **Vision** - Forge Closer Ties between R&D and Innovation from different stakeholders

  - Research Centers
  - University Departments
  - Industry Professionals
  - Public / Government Institutions

OBJECTIVES AND PARTNERSHIPS

Development of:

- *Startups / SMEs*
- *Entrepreneurial spirit, personal and corporal spirit among young innovators*
- *Assistance and Mentoring for Rapid Growth SMEs*
- *Stimulus for emerging new technologies*

Partnerships

2017, Global STP management best practice
by International Association of Science Parks (IASP).

SERVICES

Training and Knowledge

- Business and personal development trainings
- ICT and Engineering trainings
- Bootcamp & Hackathons
- Access to information & academic libraries
- Professional consultancy & mentoring
- Networking, workshops and seminars access

Logistics and tenants

- Full-scale office spaces
- Reception services

Events

- Open Days
- Info-sessions
- Workshops / Seminars

POLICIES AND ADMISSION PROCEDURES

Admission procedures

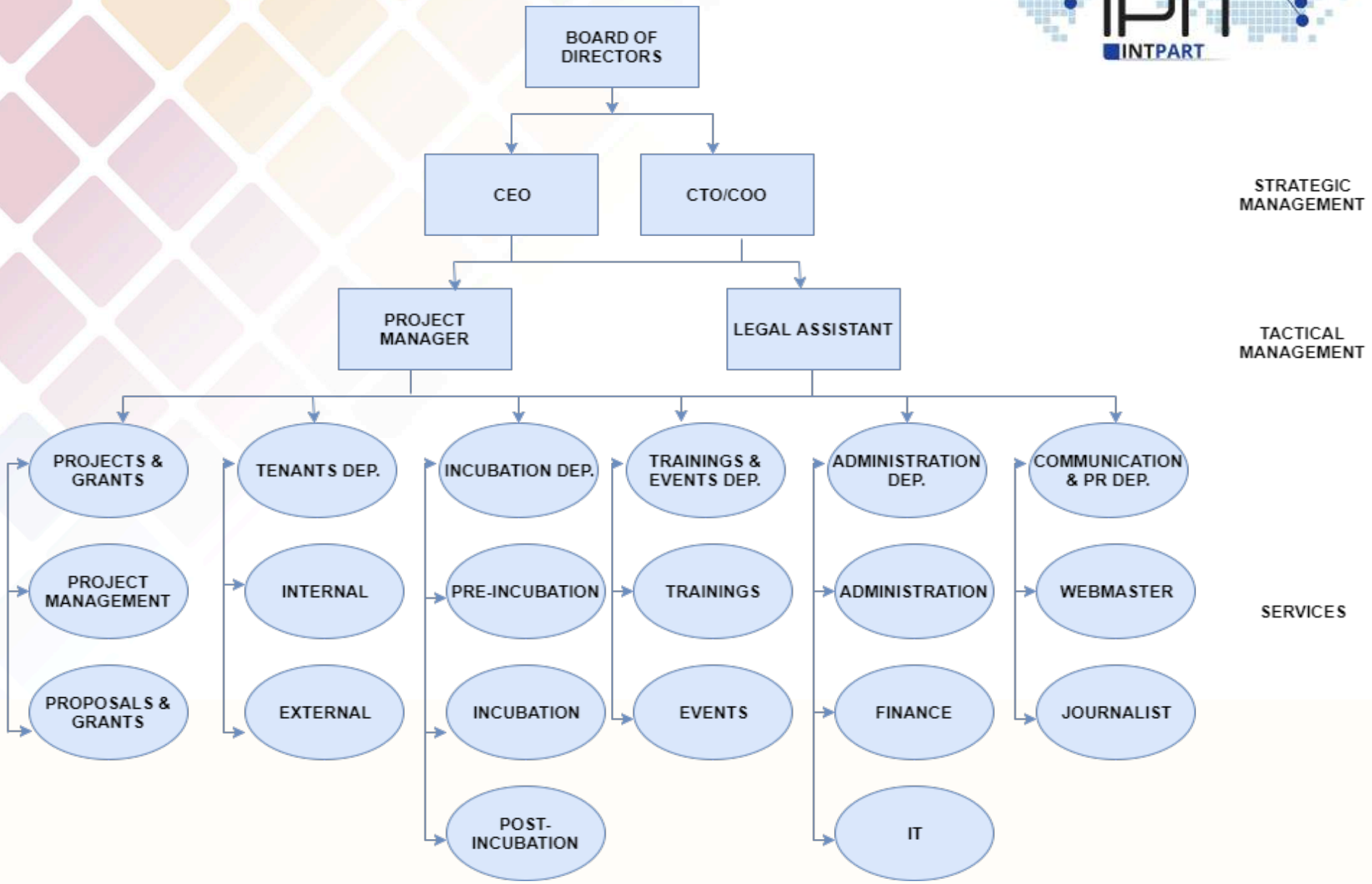
- Initial Contact - Bootcamp/Direct
- Pre-application
- Eligibility Assessment
- Application
- Business Plan Assessment
- Evaluation Decision
- Becoming part of the pipeline

Policies

- Preliminary Assessment
- Formal Application
- Admission committee formation
- Contractual Agreement Signing

Portal : http://mincubator.al/join/

ORGANIGRAM


BOARD OF DIRECTORS
CEO
CTO/COO
PROJECT MANAGER
LEGAL ASSISTANT
PROJECTS & GRANTS
TENANTS DEP.
INCUBATION DEP.
TRAININGS & EVENTS DEP.
ADMINISTRATION DEP.
COMMUNICATION & PR DEP.
PROJECT MANAGEMENT
INTERNAL
PRE-INCUBATION
TRAININGS
ADMINISTRATION
WEBMASTER
PROPOSALS & GRANTS
EXTERNAL
INCUBATION
EVENTS
FINANCE
JOURNALIST
POST-INCUBATION
IT
STRATEGIC MANAGEMENT
TACTICAL MANAGEMENT
SERVICES

RUNNING OFFICES

Currently Running Offices and Services

- Directing
- Board of Directors
- Marketing and Events
- Public Relations
- Venture Capital and Peer Funding
- Market Advisory
  - B2B
  - B2C
- IP Rights and Legal Office

Regional vision: Creating knowledge society

- Type of society **needed to be competitive** in dynamics of today‘s world.
- Society where **knowledge is the dominant production factor** of growth.
- Society relying on **the knowledge to drive innovation**, **entrepreneurship** and dynamism of economy.

Regional vision: Creating knowledge society

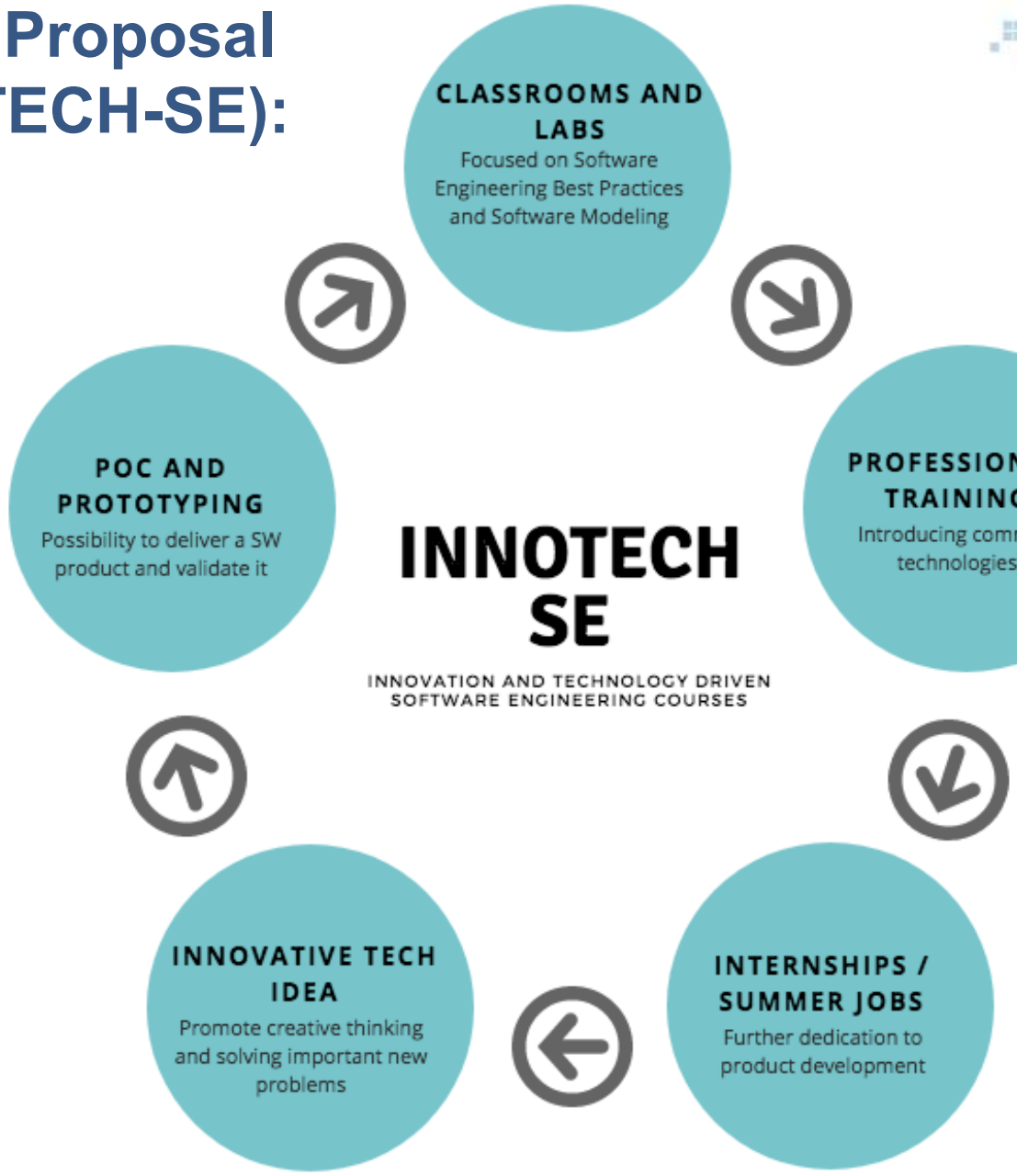
Innovation capability of the region (GII - Global Innovation Index):

Country (128 incl.)	GII 2016 ranking	GII 2015 ranking	2015 - 16 progress
Slovenia	32	28	-4
Croatia	47	40	-7
Montenegro	51	41	-10
Macedonia	58	56	-2
Serbia	65	63	-2
Bosnia and Herzegovina	87	79	-8
Albania	92	87	-5

Hypothesis

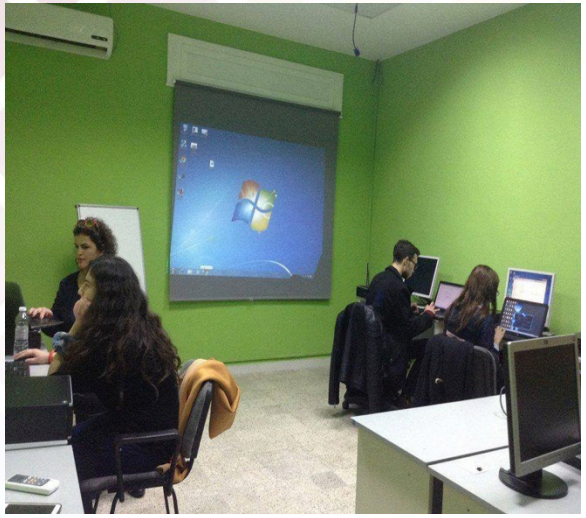
No.	Hypothesis
H0	Empirical software engineering applied to students as subjects/researchers provides sufficient quality and cost efficiency in evaluating new education approaches.
H1	New education trends are useful in enhancing knowledge in Empirical Software Engineering
H2	Properly considering all stakeholders would contribute into more effective methodologies for software engineering approaches
H3	Innovation and startups involved with continuous training part of academic curricula and especially software engineering would be a new effective model, derived from empirical data.

Model Proposal (INNOTECH-SE):

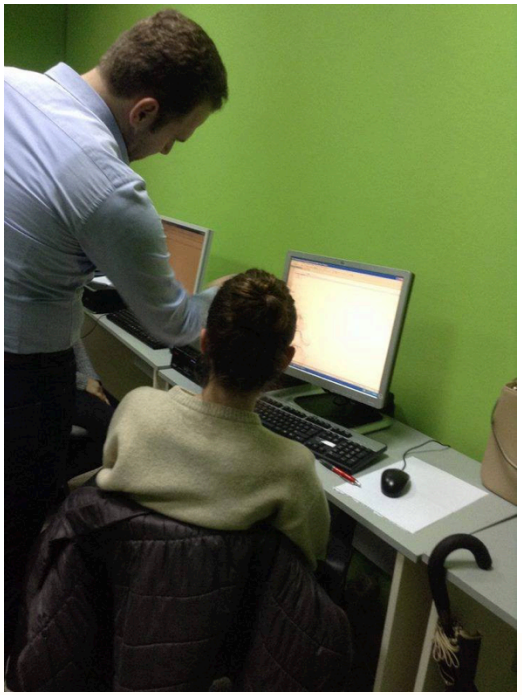


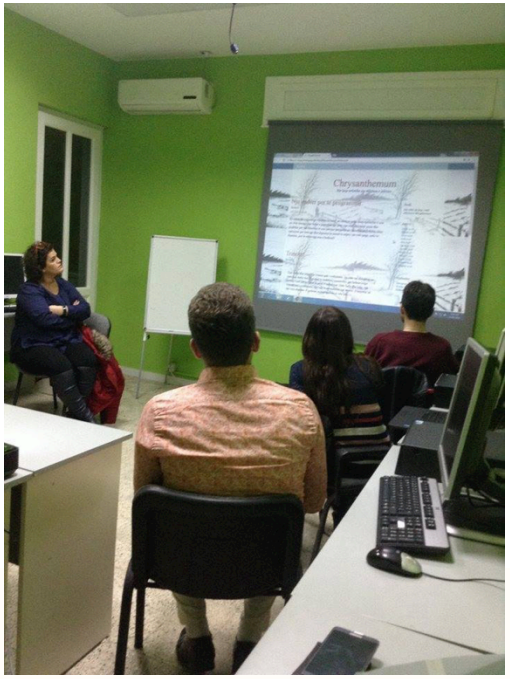
Innovation and Technology driven SWE Courses

Analytical and Quantitative Measures
PROFESSIONAL TRAININGS



Moments during Web Design training, February 2016





- WEB DESIGN
- MOBILE & CLOUD
- LINUX SYSTEM ADMIN

Analytical and Quantitative Measures INTERNSHIP

Moments during Internship, August 2017

RASPBERRY PI LAB

- Traffic light
- RGB LED
- Motion sensor
- Alarm sensor
- Alarm and motion

WORKSHOPS and EVENTS

Attendance and sponsorship of YouthSpeak Forum, November 2016

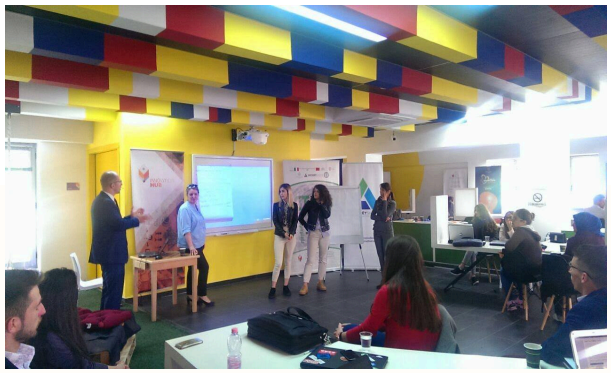
Teacher Robot Presentation, April 2017

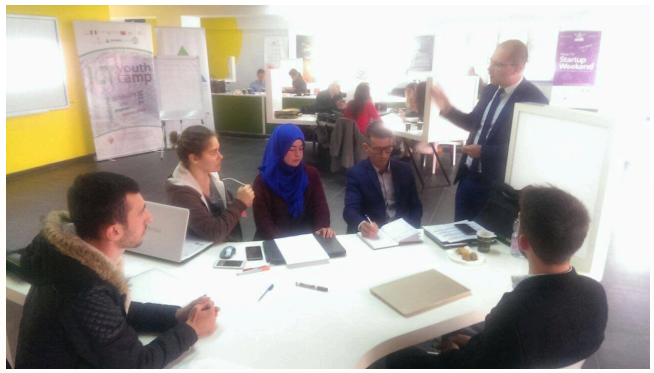
Startup Albania Competition, May 2017

Attendance and sponsorship of ICT Youth Camp, April 2017

BSc/MSc and Highschool Bootcamp EVENTS

HighSchool ICT Bootcamp 2018





Univeristy Level ICT Bootcamp 2017

Analytical and Quantitative Measures Startups (I)

UniTask

MyCareer

Ciceroni Virtual

Analytical and Quantitative Measures Startups (II)

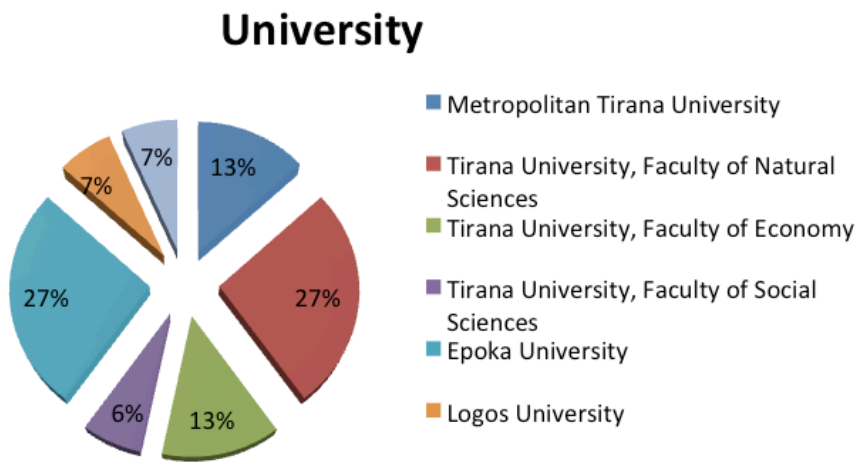
Python For Kids

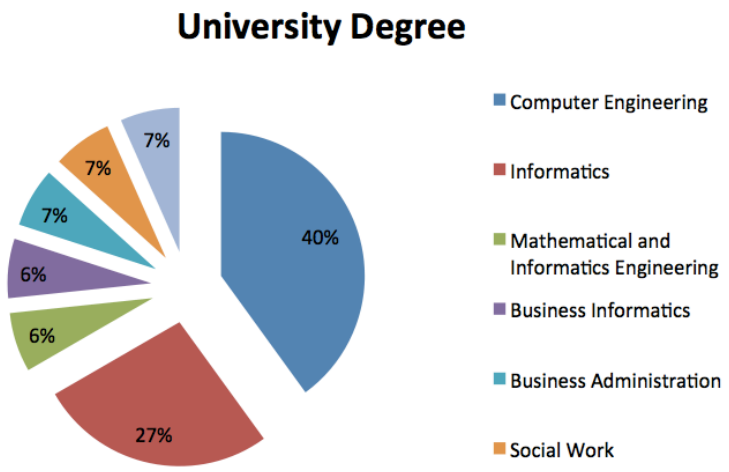
Literature Corner

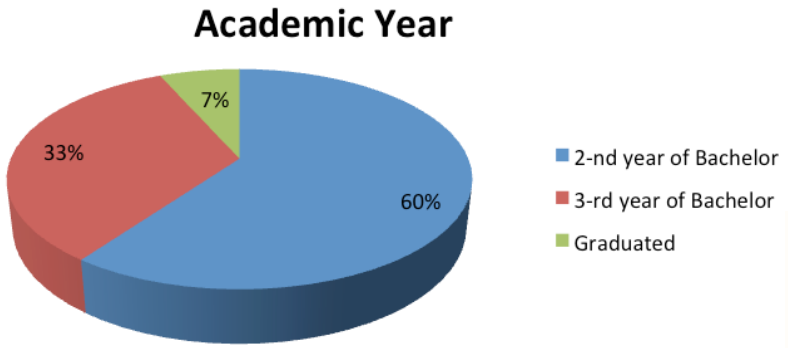
iReporTourist

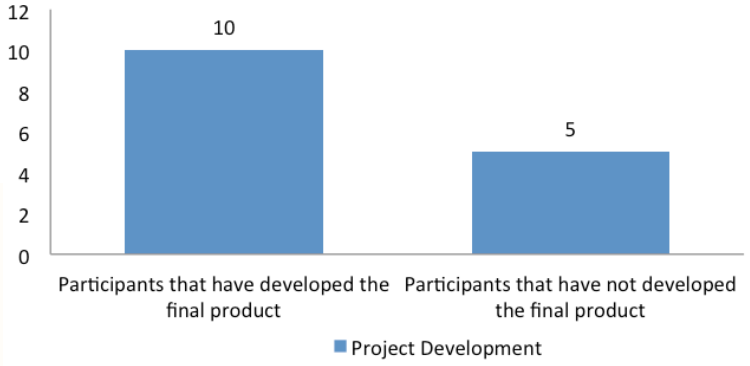
IOTime

Analytical and Quantitative Data



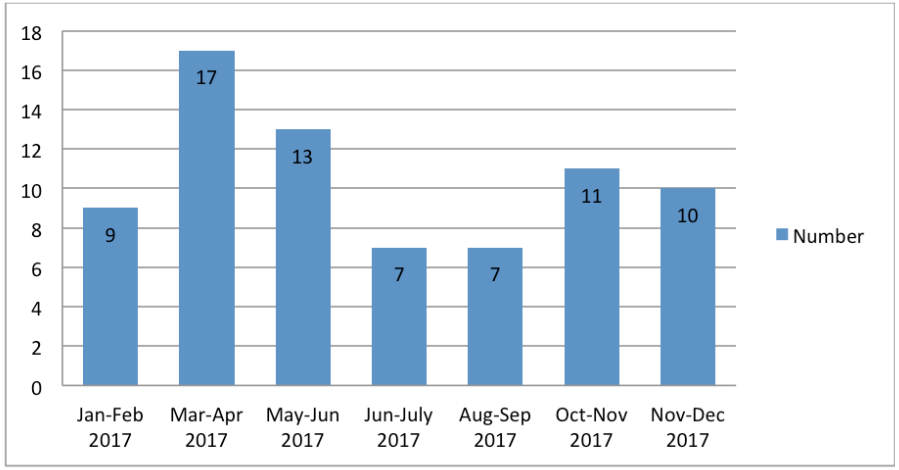




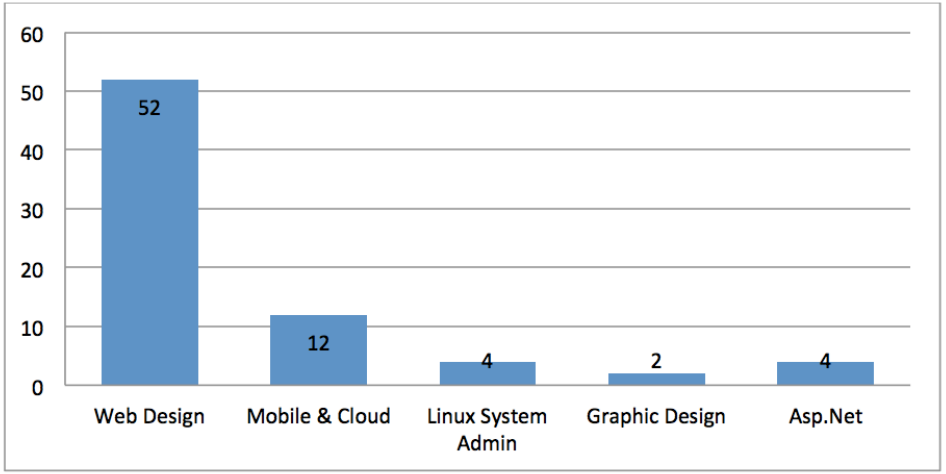


Dominusoft Company Training

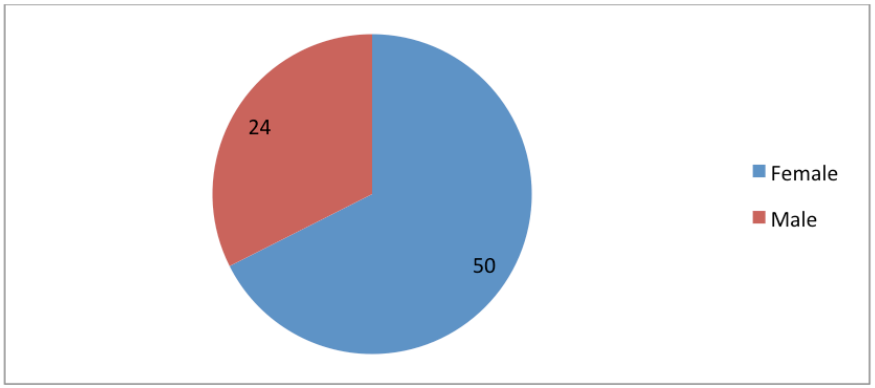
Professional training participants devided into periods



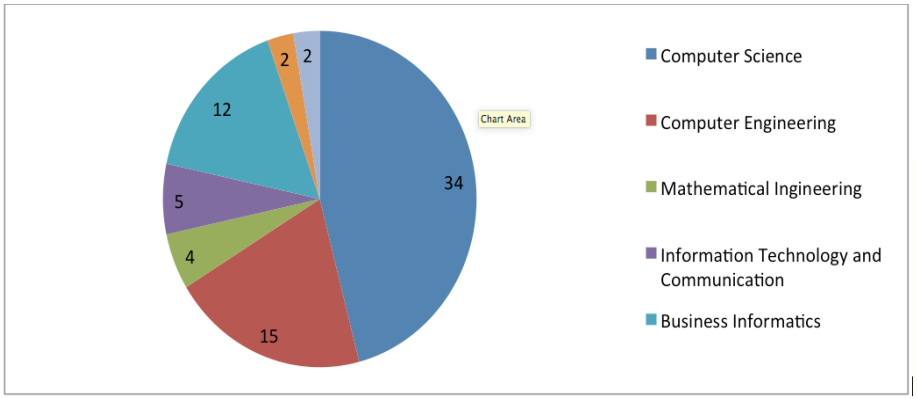
Participants according to the type of training



Participants according to gender



Participants according to the type of Degree



Dominusoft Company Training
STATISTICS (II)

SUMMARY TABLE

Total Nr. Participants	Gender		Participants according to training					
	F	M	Web Design	Mobile & Cloud	Linux System Admin	Graphic Design	Asp.Net	
74	50	24	52	12	4	2	4	
			Participants according to Degree					
			Comp. Science	Comp. Engineering	IMI	TIK	Business Informatics	Finance	Highschool
			34	15	4	5	12	2	2

INNOTECH-SE MODEL ADV/DIS

+ Advantages

- Technology absorption
- Focus on practical knowledge
- PoC and Prototyping
- Creative Idea Validation
- Higher course motivation
- Team work
- Market validation

- Disadvantages

- Highly dependent on the team
- Increased Effort
- Steeper learning curve
- Several stakeholders => Coordination
- Communication issues => Project Failure
- Increased concern with course evaluation

INNOTECH-SE MODEL
Conclusions

- Students gain **increased practical knowledge** when participating to trainings and internships
- SWE **courses** projects become **more relevant to the industry** and **Tech Statups** formation is **facilitated** at an early stage
- Several **stakeholders come together** in a common **collaborative environment**

THANK YOU!

QUESTIONS are WELCOMED!