Project Management

Summary

- Introduction & Context
- Project & Team & Doc Management
- Product:
  - Requirements
  - Architecture
  - Development
    - Core
    - Hardware & Services & Plugins
    - Web
  - Tests
- Entrepreneurship

Introduction & Context

- Universidade do Minho
- Department of Informatics
  - MSc in Informatics
    - UCE 15, 1st semester
    - Project Component
- Enterprise & Product from the Ground-Up
  - **Sensors Network Software:**
    - Manage a smart sensors network
    - Subject suggested by DI teachers (Virtual CEOs)
  - **Objectives:**
    - Start-up company creation & management
    - Build a Business Plan
    - Release a Final Product

Project Setup

Challenges
- **32 members** to manage
- 5 Months Project:
  - 2 Weeks => **Build a Team Structure**
  - 1-2 Months => Gather **Reqs** & Design **Arch**
  - 3-4 Months => Product **Devel+Test+Doc+Pack**
  - 5 Months => **Entrepreneurship**
- **5 Project Managers**
  - Self-proposed & Elected by all team members
  - Professional Experience
  - Odd number => Decisions made by majority
- **1 TM / Team**
  - Self-proposed @ initial teams
  - Approved by PM & respective team members

Project Setup

Challenges (cont.)
- Create a product in **4 months**:
  - Team Setup & Members Placement
  - Setup Communication & Documentation Processes
  - Define Project Technologies
  - Entrepreneurship Information Gathering & Business Plan Setup
  - Gather Client Requirements & Manage Changes
  - Generic Architecture Design
  - Environments Setup & Code Development
  - Test Types Definition & Setup
  - Manuals Generation

Project Setup

TEAMS SETUP
- 8 Teams <u>divided by Work Areas</u>:
    - **PM** - Project Management
    - **TM** - Team Management
    - **EMP** - Entrepreneurship
    - **REQ** - Requirements
    - **ARQ** - Architecture
    - **DEV** - Development
    - **TST** - Tests
    - **DOC** - Documentation
- <u>Conclusions</u>:
    - All teams were needed
   - Lack of inter-communication

Project Setup

Team Members Placement Process
- <u>Placement method used information</u>:
  - Provided by each member
  - Gathered using a shared Google Docs style sheet:
    - **Contacts/Skills Matrix**
      - CV & known Technologies
    - **Areas Matrix**
      - Member preferences by area
    - **Programming Languages Matrix**
      - Members know-how on prog. lang.
- <u>Conclusions</u>:
  - **Best know-how placement** scenario found
  - Quick members placement & Less initial conflicts
  - Some conflicts rose some time after

Project Setup

Team Organogram
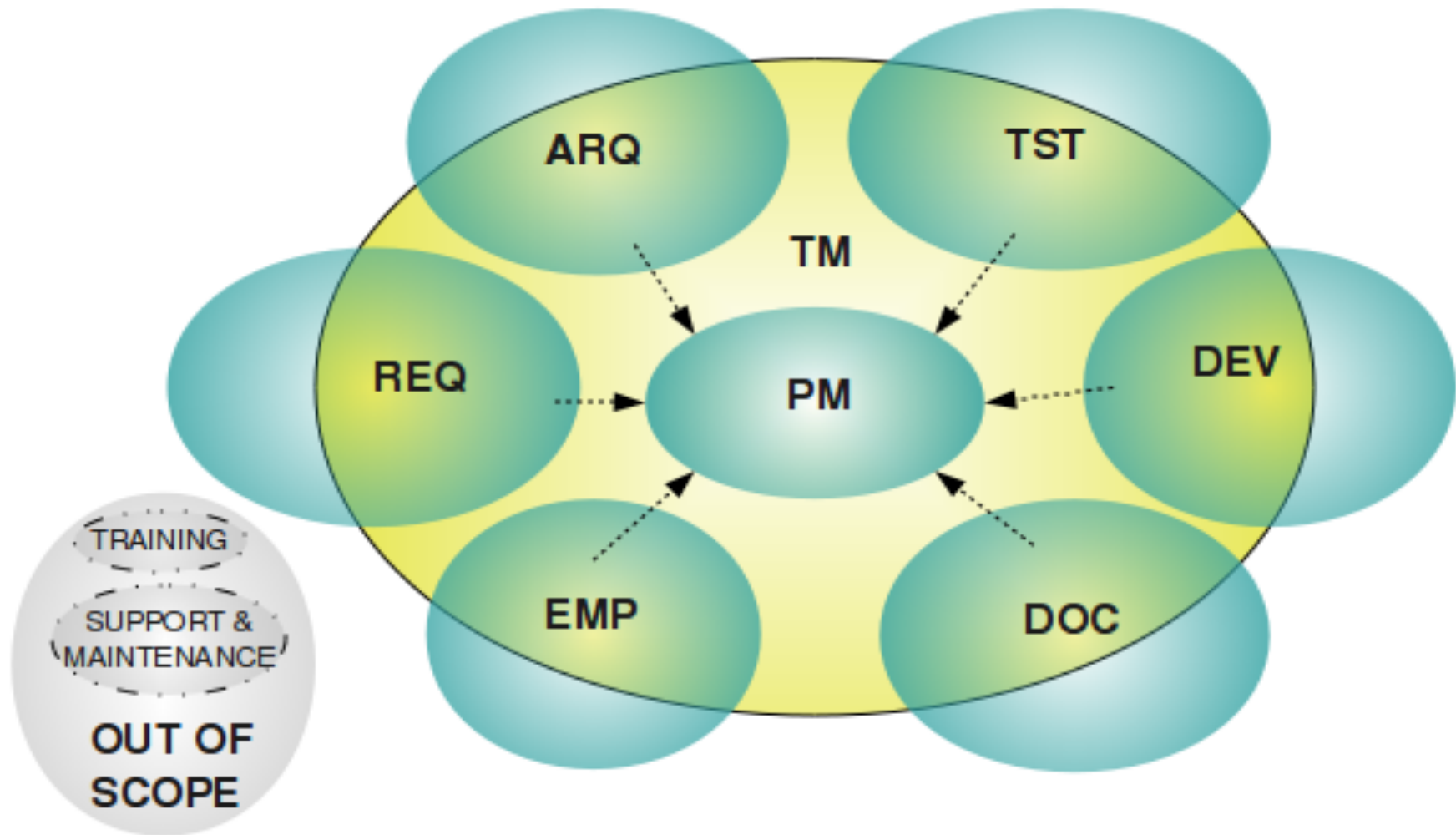
Project Setup

Group Communication Strategy
- <u>Google Groups</u>:
  - **Ubiquitous Communication**
  - **Simple** & **Fast**
  - **1 Group / 1 Team**
  - Generic groups (+Team Groups):
    - **Global**
    - Suggestions
- <u>Conclusions</u>:
  - **Adequate asynchronous comm method**
  - **Distinct mail reading habits** = Complaints on excessive nº of mails received

Project Setup

Project Management Methodology
- Selection inspired on UCE15 PM Seminars:
- Methodologies learned:
  - Waterfall
  - RUP
  - SCRUM
  - eXtreme Programming
- Method Chosen:
  - **RUP + SCRUM**:
    - Best of both Worlds
    - RUP Phase Balancing & Documentation Process
    - SCRUM Weekly Reports & Backlog Policies

Project Setup

Group Documentation Strategy
- How to organize the documentation need to track the progress of 32 employees?

- Agile method Scrum => daily scrums
  - Too heavy for our purpose
  - Solution: **Weekly Scrums**

- 1 Weekly Scrum per Team:
  - Quick and easy way for tracking progress

Project Setup

Final Report Strategy
- The development report reflects decisions and implementations followed by each team

- RUP provides reports for each team
  - Again: Heavy for our purposes
  - Teams need a way to write progress without worrying about specific formats
  - Solution: **Wiki**

- Wiki philosophy => *"better something than nothing"*
  - Teams can write progress & ideas without delaying or interfering with their work (development team)
  - Text flow and clearness can be added later

Project Setup

Types of manuals
- **Product Manual**
  - Covers all product functionalities
  - Reference for administrators

- **Quick Guide**
  - Set of steps illustrated as images
    - guide users in most relevant tasks
  - Least text possible, *1 picture is worth 1000 words*
  - Reference for users

Project Setup

Used Software:
- **OpenProj** - Project Management (<u>replaced by TRAC</u>)
- **OpenOffice** - Documents Creation
- **Google Docs**
  - Ubiquitous Document Management
- **TRAC** - Information Management
  - Wiki edition & PDF generation
  - Technologies know-how exchange
  - Bug/Ticket tracker
  - Project Management
- **GMail**
  - High Availability e-Mail
  - Instant Chat
  - Google Docs integration

Project Evolution

Problems found:
- Inter-communication & misinformation issues
- Members **lost focus** easily:
  - UCE15 Article
  - Master Thesis
  - Jobs/Grants (Full-time / Part-time)
  - Other Priorities [Family, Friends, Life (?)]
- Limited work conditions:
  - **Network connectivity issues**
  - 24/7 access to DI could have been granted initially
- [Effort+Expectations] **>>** [Project Grade (**6/20**)]
  - Less Motivation & Brainstorm power
  - Induces Weaker Commitment
- Presence control not formally imposed by CEOs

Project Evolution

Goals Achieved:
- **Semi-Professional environment creation**
  - Balance => Responsibility / Friendship
- Teams' Management revealed positive results
- **Good synergies** generation considering:
  - Reduced timeline
  - 32 unknown personalities
- Final Results were:
  - **Excellent** @ Entrepreneurship
  - Very good @ Technical Low Level
  - Good @ Technical High Level
  - Reasonable @ Final Product (Alpha Release)
- Overall Self-Evaluation: **4/5**

Project Evolution

Goals to Complete:
- Final **Product Release**
- Find **Professional Work Facilities & Conditions**
- Improve **Project Planning**
- Improve **Inter-communication Skills**
- Improve **DEV/TST environments** & **integration**
- Increase **global know-how**
- Refine **Business Plan** & **Marketing Image**
- Apply to **real funding** & business angels
- Approach **real clients**