

GSAW 2018

# AGILE GS SW: CHEAPER, FASTER AND BETTER

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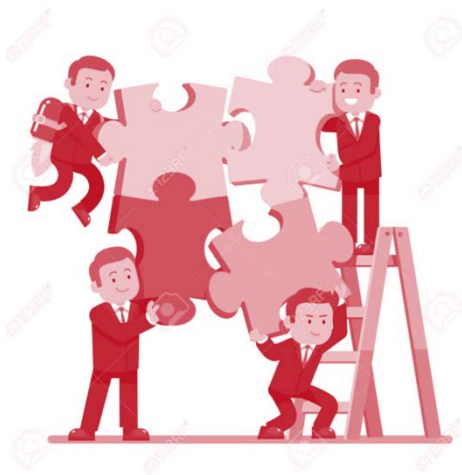
# INTRODUCTION

- **Before agile**
  - Regressions and SW failures
  - Low productivity rates
  - Lack of involvement and responsibility of development teams
  - Crisis solved by “heroes”
- **Transformation vision**
  - Be a happy team creating the best ground control SW in the world
- **Transformation objectives**
  - Improve SW quality
  - Work with peopleware values
  - Customer satisfaction: Frequent deliveries & velocity

# FROM PROJECTS TO TEAMS

**Project-oriented** groups can lead to:

- Different solutions for the same issue
- Sub-optimum workload distribution
- Priorities not properly addressed



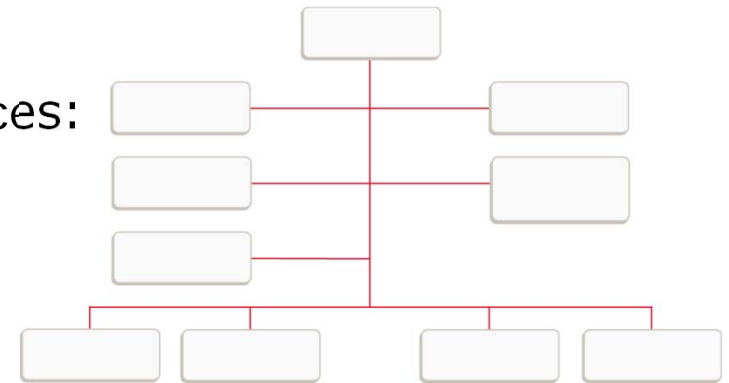
**Agile teams** benefits:

- Backlog oriented to provide the best value
- Team velocity increase
- Continuous improvements in the team

# HIERARCHICAL VS PEOPLEWARE

## **Hierarchical** organization consequences:

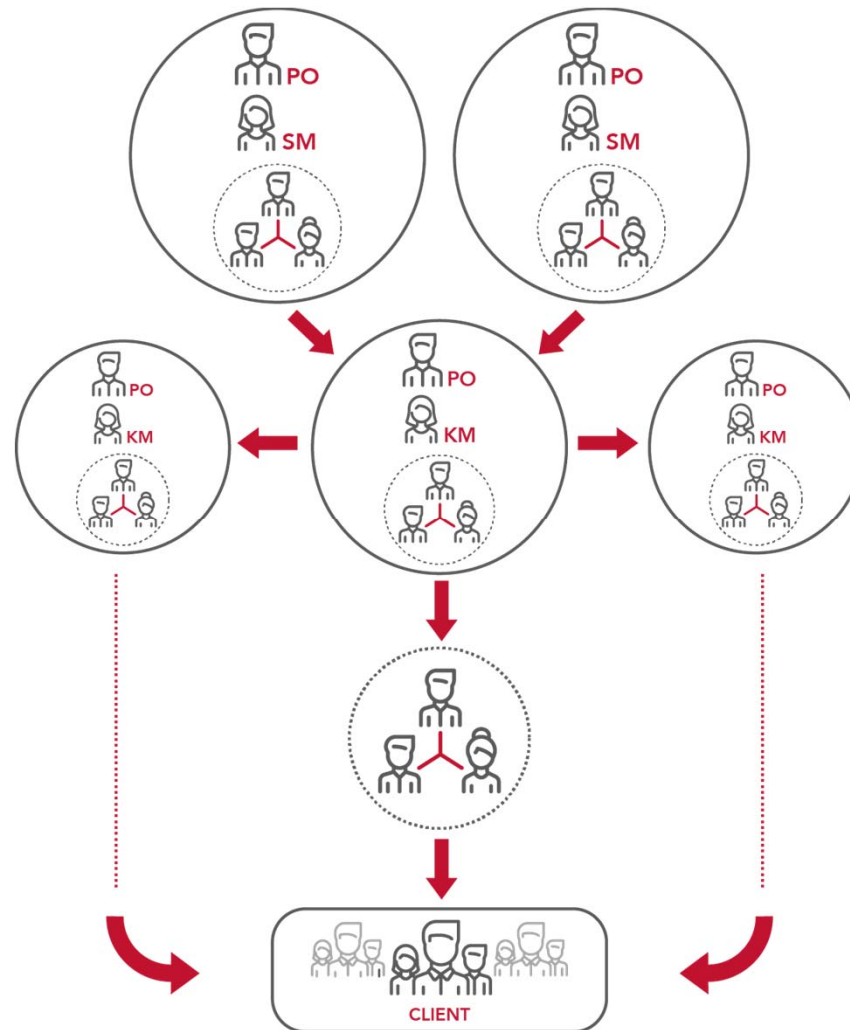
- Project manager is responsible, but
- Development is done by the team
- Team involvement is limited



## **Peopleware:**

- SW is done by people, not by machines
- Work with motivated teams
- Focus, prioritize, complete as many tasks as possible

# NEW ROLES



# HOW TO DEAL WITH NON-AGILE CUSTOMERS

**The challenge:** to extend the Agile culture to customers

**Technical staff** usually open to quickly adapt the model (early adopters)

- Frequent delivery as key factor for showing the advantages of the Agile model
- Quick reception of the systems, less uncertainty
- Collaboration, development based in real needs



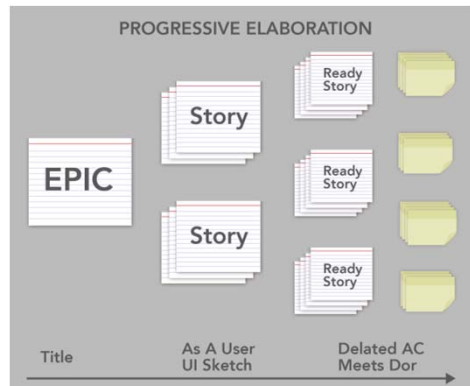
Higher resilience in **management layers** (laggards)

- Different models need to be applied in organizational and financial matters

# REQUIREMENTS VS USER STORIES

Most customers prefer traditional  
**Requirements**

- Contractual: *apparently* easier to manage
- Locked/Limited

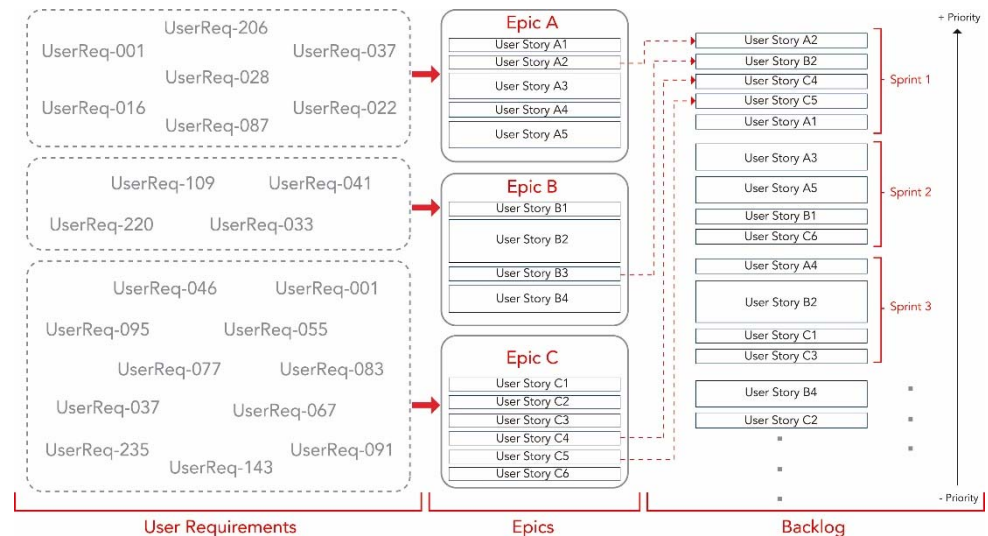


But... a **User Story** is just a well-expressed requirement

- **User language:** Communication, feedback, collaboration
- **Flexible:** Adaptive to user needs, innovation
- **Simplified planning:** Just-in-time, meet objectives

# REQUIREMENTS VS USER STORIES

- User requirements /acceptance tests converted into:  
→ Epics → US → Tests
- A Docker container is provided after every Sprint
- Improved customer feedback and satisfaction



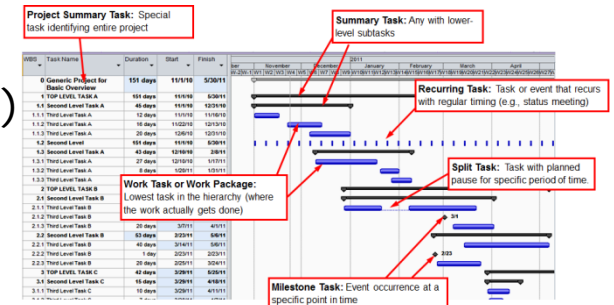
- Classical validation phases (FAT/SAT) are kept but lighter and with improved results



# GANTT VS CONTINUOUS DELIVERY

## Project schedule based on Gantt:

- Generic – and big – tasks (Design, Integration)
- Product is only available at the end
  - Too late to complain!
- Development delays shorten testing
  - Robustness at stake



- **Frequent delivery of working SW**
- After each sprint, SW is ready to be delivered
- Customer can see the functionality early in the process
- Testing is a must
  - iTeam
  - Long-term testing in parallel to quick deliveries
  - Fixes introduced as needed in the backlog

# AGILE QA

- **Agile** is a framework for complex developments
- Agile process can be stronger, integrated and coherent thanks to QA and CMMI techniques



- QA system and **CMMI** as reference models with a collection of best practices
  - Can be tailored to adopt the **flexibility** and **adaptability** of Agile
  - Traditional waterfall model replaced by incremental approach
  - Some practices are revisited to remove not useful activities



**CMMIDEV/5**<sup>SM</sup>  
Exp. 2016-09-16 / Appraisal #20109

# LEGACY CODE

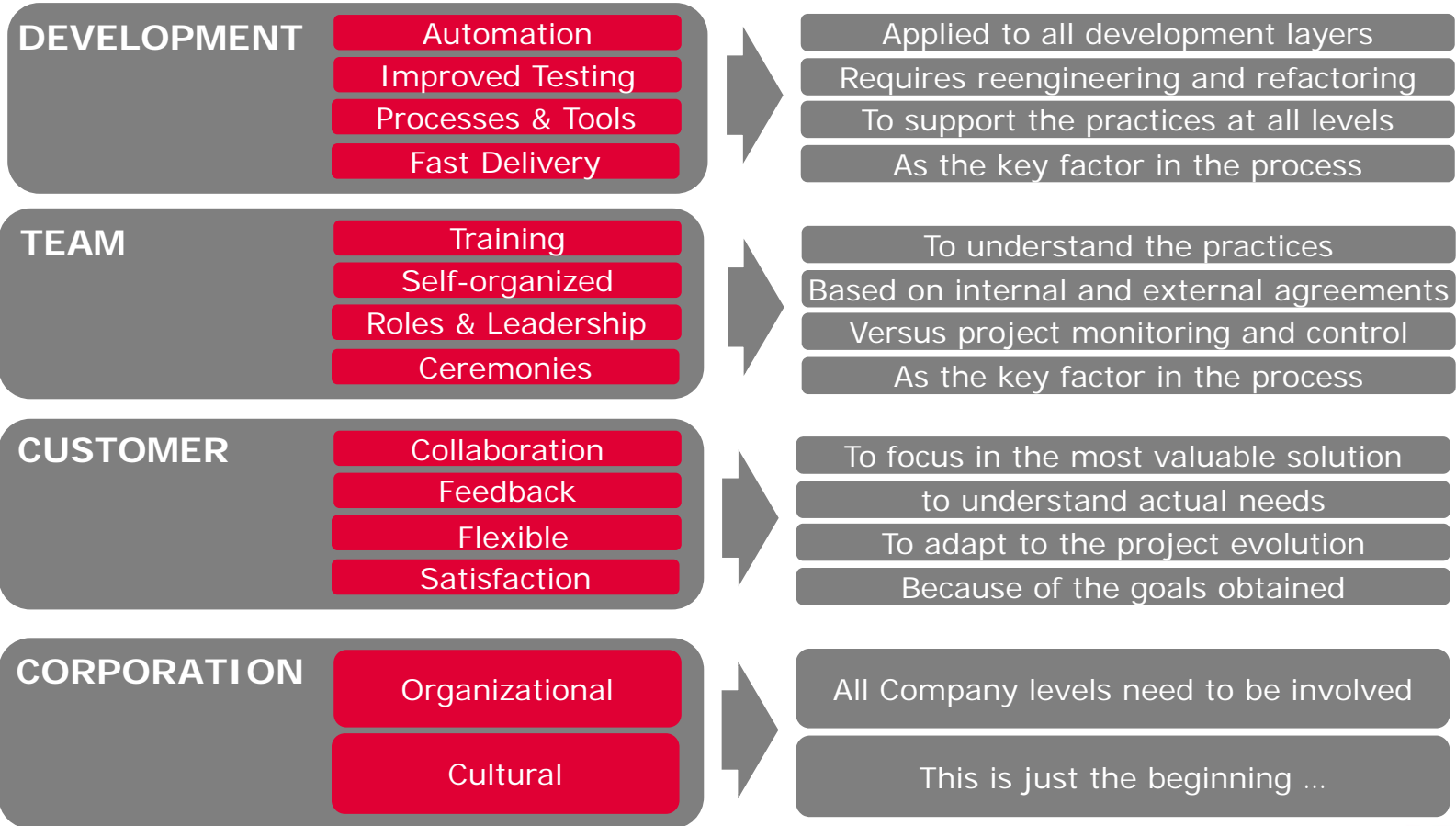
- Legacy code usually prevents **frequent delivery**
- Frequent delivery implies **automation**
- Automation applied to the **whole development process**: code audit and metrics, build, deploy, testing and validation



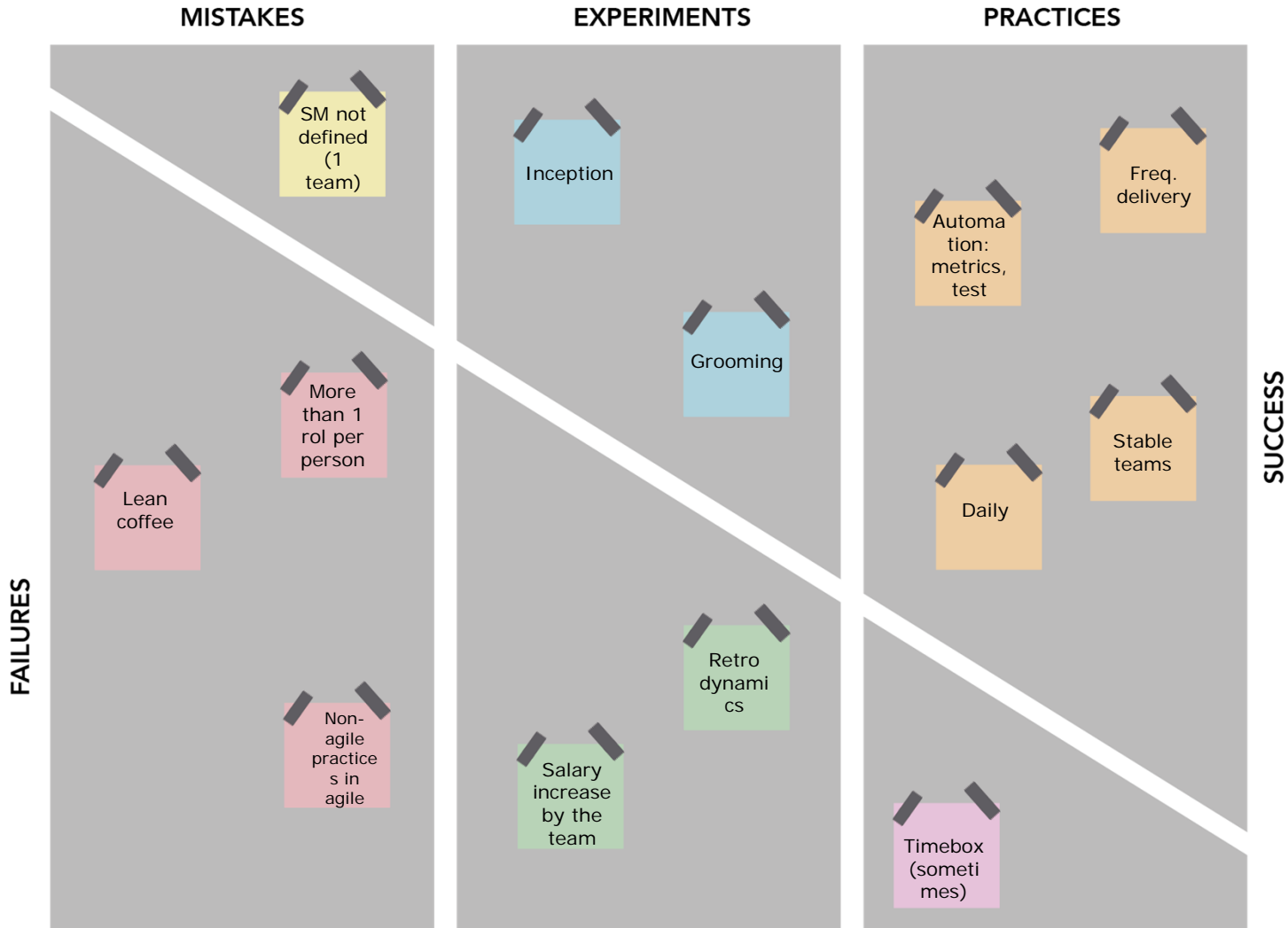
- Very low level, even nonexistent **automatic testing** in legacy code
- **Reengineering** for introducing automation: development processes, tools and code

# USE CASES

## Agile Success Story: EUTELSAT at GMV



# LESSONS LEARNED



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