

QualIPSo OMM (Open Maturity Model)

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CORDIS



Information Society
Technologies



- Introduction
- Problem Description
- Mapping of TWEs to CMMI
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Allow companies to use FLOSS
to build their mainstream
products and services

OMM

Definition of a CMMI-like model
for FLOSS to improve
the trust in FLOSS software

- Quality certification is not easy to obtain for Free/Libre Open Source Software (FLOSS) produced by globally spread out individuals or virtual teams who often operate **without much infrastructure** and / or **formal tool environment**
- **Basic Quality Assurance** (QA) measures such as extensive testing, field testing are not enough to create '**trustworthiness**' of the FLOSS among the potential integrators and other customers.

- There are benefits for developers, integrators and end-users related to the possibility of demonstrating the trustworthiness of their projects
 - it is first necessary to identify the characteristics that make FLOSS trustworthy

QualiPSo OpenSource Maturity Model (OMM).

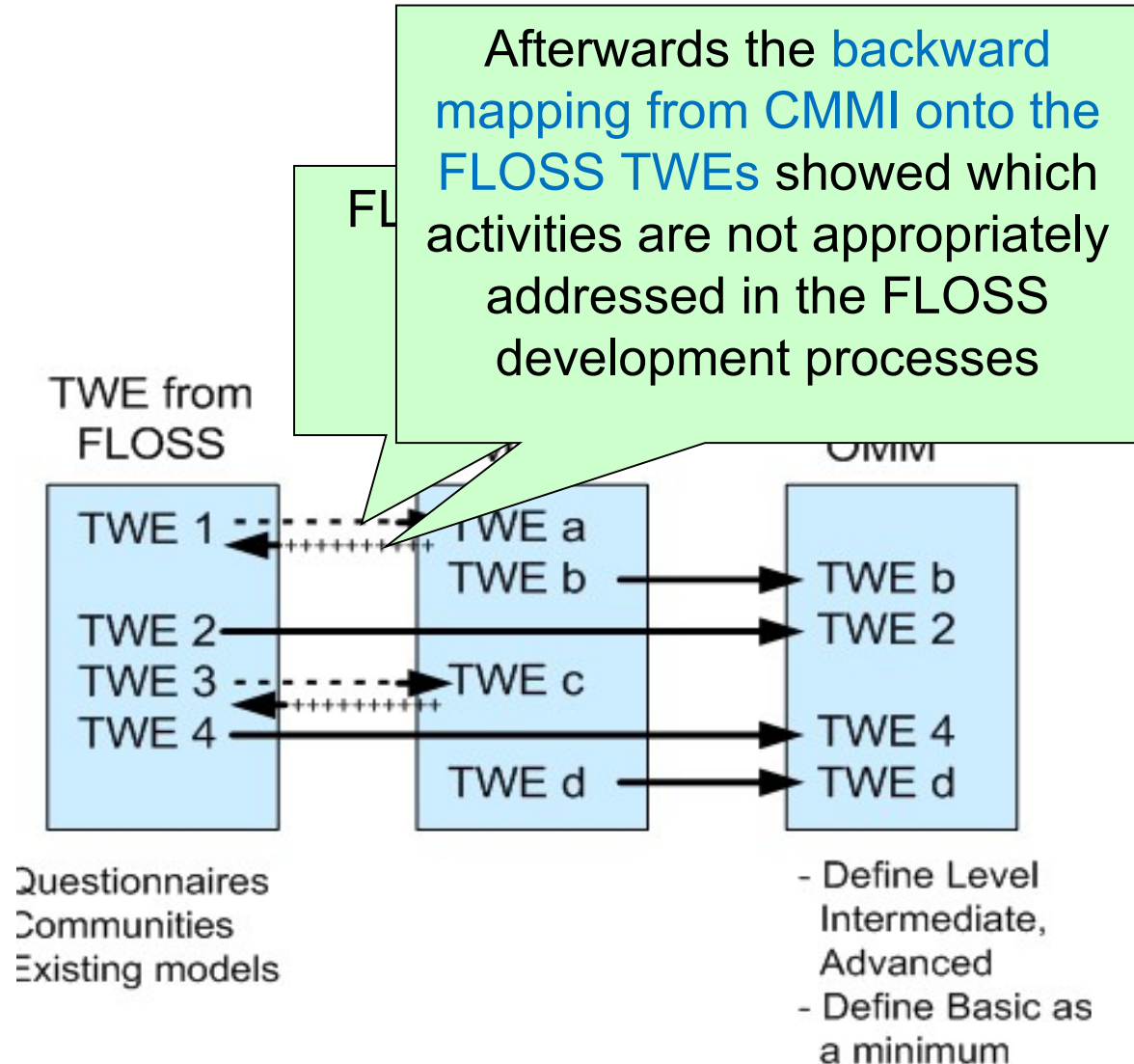
In general, it is a CMM-like model based on FLOSS ***trustworthy elements*** (elements that bring trust in the quality of specific aspects of the FLOSS development process).

- We have researched mainly three sources of information about the trust in the FLOSS development process:
 - published material on FLOSS.
 - public FLOSS repositories by using specifically developed tools, and
 - people working for software companies and individuals involved in FLOSS projects that use, integrate or develop FLOSS.

The majority of trustworthy elements identified from FLOSS communities and industry surveys confirmed findings of other research already published in the literature

- One finding of the research was that there is a large number of users of FLOSS that are *interested in using a standardized assessment methodology for evaluating FLOSS and the FLOSS development process.*
- The creation of a CMM-like MODEL is perceived as an important initiative to raise the perception of the FLOSS project quality and its development process. It may also benefit a wider introduction of FLOSS in the software industry.

- Which elements from **CMMI** and from **TWEs** should be included in the QualiPSo OpenSource Maturity Model (OMM)?
 - The idea was to compare the TWEs identified in FLOSS development processes with elements present in CMMI and find out which are necessary inside the new model.
 - OMM is the result of this extraction process.



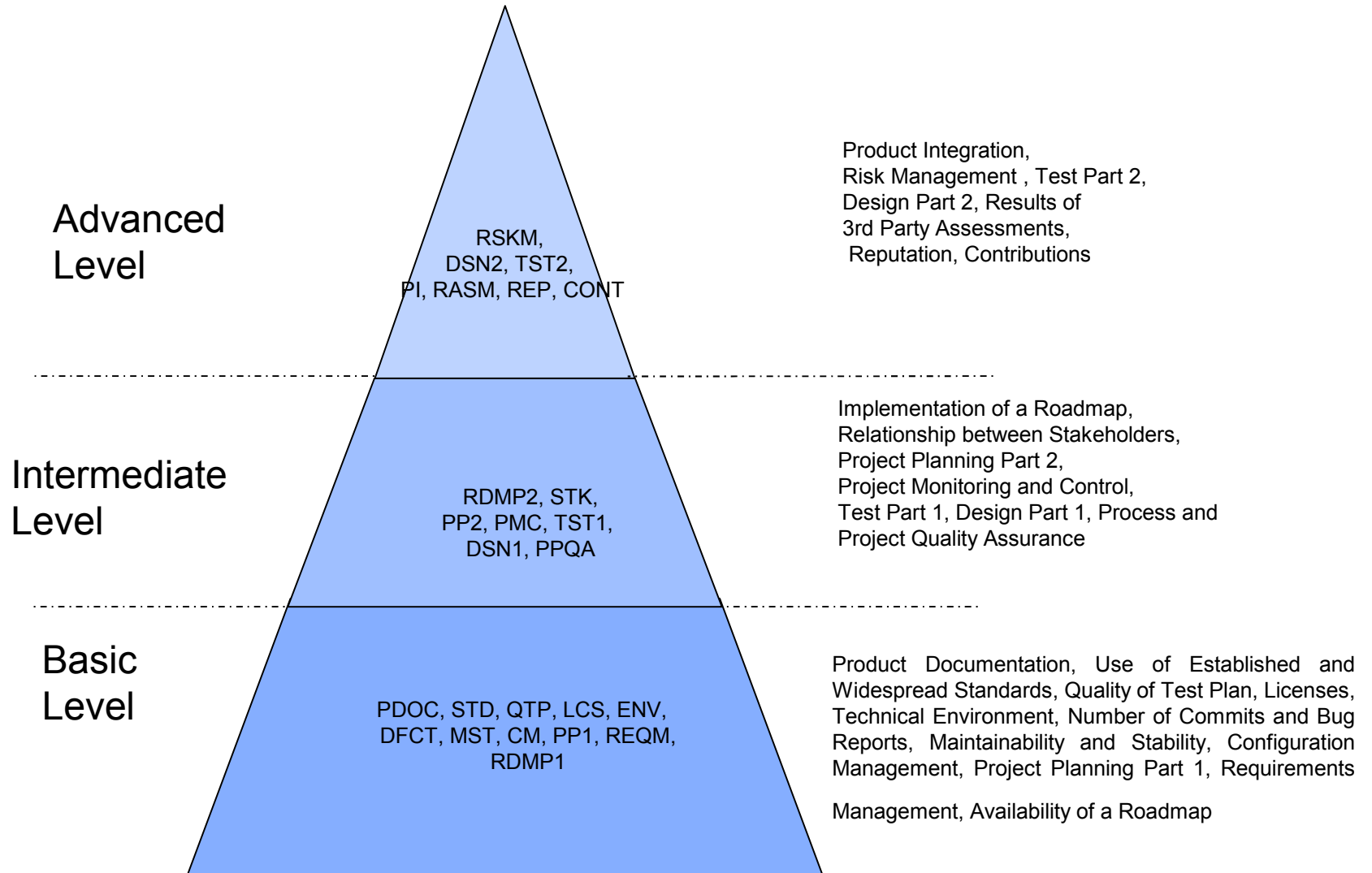
- The final result was a **combined solution** from selected TWEs and from CMMI and FLOSS. The final combination performed is represented by the arrows with full line, from the first and second columns to the third one

S No	FLOSS TWE	Related CMMI PA ¹	CMMI Reference ²
1	Product Documentation (PDOC)	Technical Solution (TS)	SP3.2
2	Popularity of the SW Product (REP)	Not addressed by CMMI	
3	Use of Established and Widespread Standards (STD)	Process and Product QA (PPQA)	SP1.2
4	Availability and Use of a (product) Roadmap (RDMP)	Requirements Development(RD) Product Integration	SP 1.1 SP 1.1
5	Quality of Test Plan (QTP)	Verification (VER)	SG1, SP1.3
6	Relationship between Stakeholders (Users, Developers etc) (STK)	Project Planning (PP) Requirements Management(REQM) Integrated Project Mgt	SP 2.6 SP 1.2 GP 2.7 SP 2.1
7	Licenses (LCS)	Not covered	
8	Technical Environment (Tools, OS, Programming Language, Dev Environment.) (ENV)	Project Planning (PP) Integrated Project Mgt	SP2.4 SP 1.3
9	Number of Commits and Bug Reports (DFCT)	Not directly addressed	
10	Maintainability and Stability (MST)	Requirements Development (RD) Technical Solution (TS)	SP1.2 SP2.1
11	Contribution to FLOSS Product from SW Companies (CONT)	Not covered	
12	Results of Assessment of the Product by 3 rd Party Companies (RASM)	If covered, then Organizational Process Focus (OPF)	SP1.2

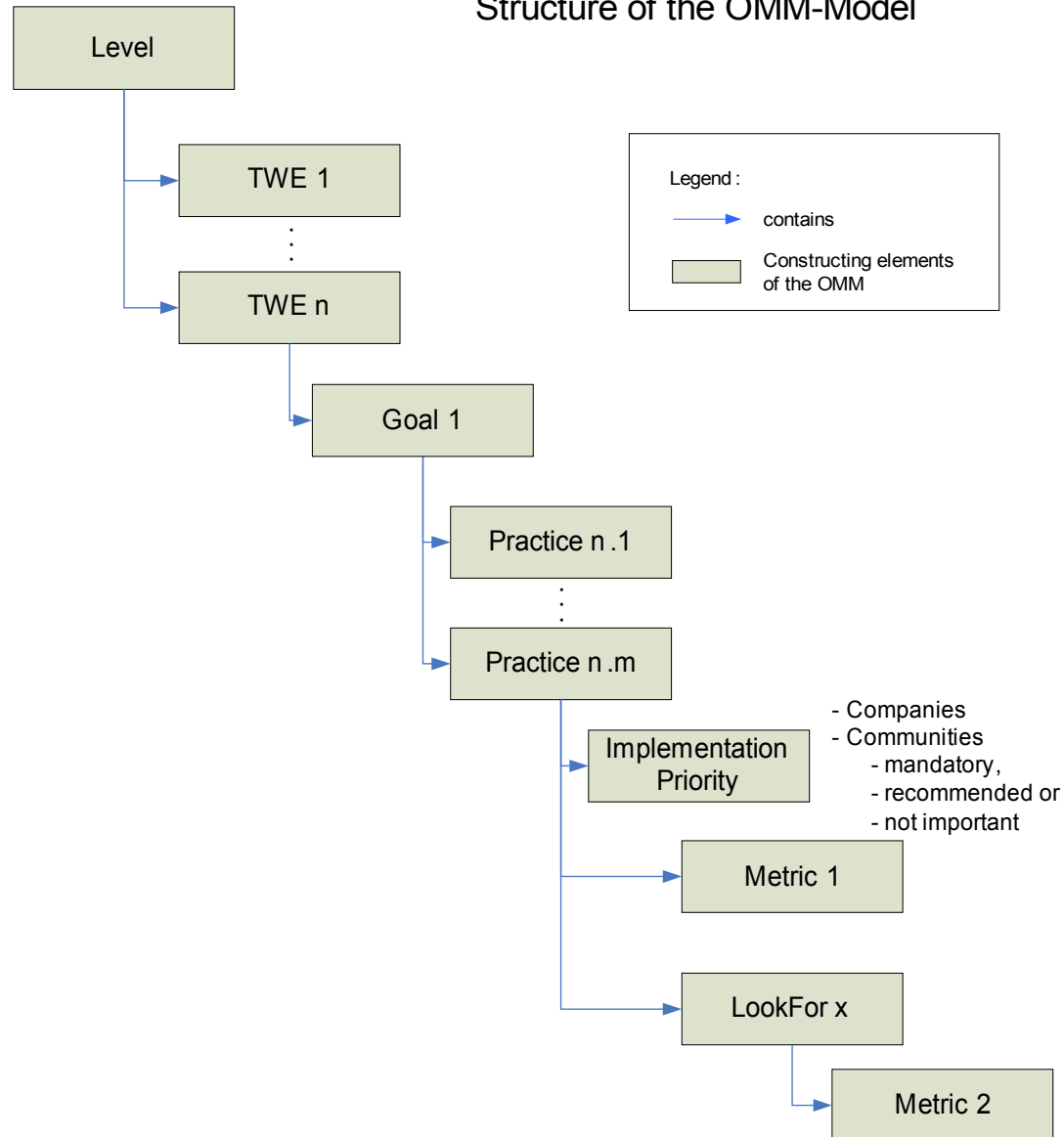
- OMM is an assessment and an improvement model focused on the FLOSS development process.
- OMM is intended for use by individuals FLOSS users, (FLOSS) development, and integration teams.
 - The emphasis is on **simplicity** and **ease of use**
- Being simple but organized as an evolutionary model, OMM can be useful for companies as well.

- OMM is constructed with the objectives:
 - To provide companies developing and/or integrating FLOSS products a basis to evaluate their own processes
 - To provide FLOSS communities a basis for developing projects efficiently
 - To provide FLOSS integrators and FLOSS consumers a basis for evaluating the processes used by the FLOSS communities

- OMM has three key levels:
 - the **Basic** level,
 - the **Intermediate** level, and
 - the **Advanced** level.
- All levels include process areas from CMMI belonging to maturity levels 2 and 3. Not all process areas from CMMI are mandatory
- Included CMMI process areas were simplified and converted into a TWE.



Structure of the OMM-Model



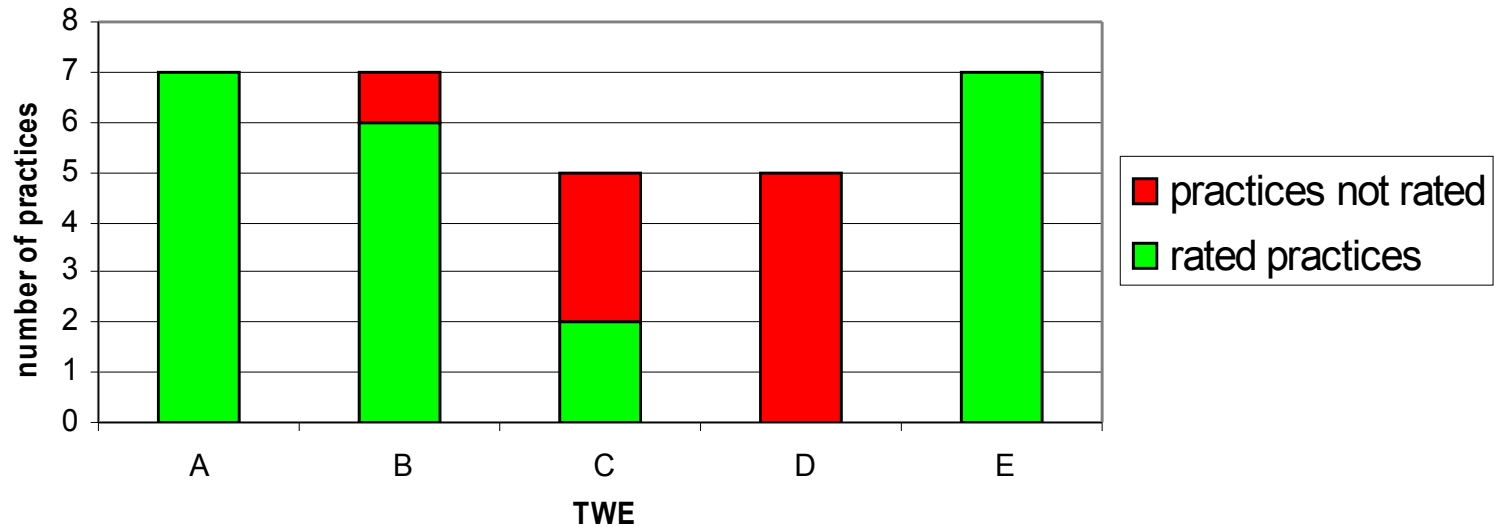
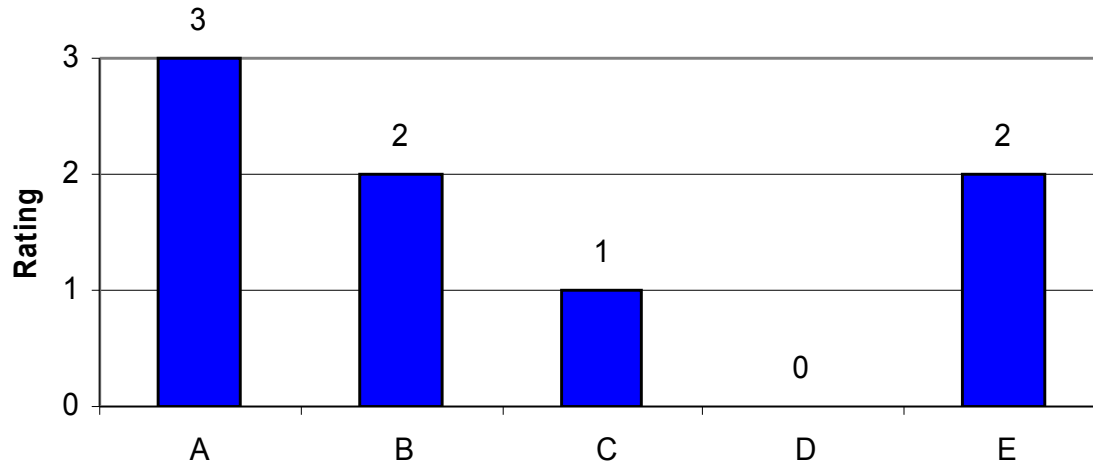
- Basic level: example (1/3)

PDOC: Product Documentation		Implementation Priority	
Purpose: Develop and maintain product documentation, making it readily accessible to the community.		Compa nies	Communi -ties
Goal PDOC 1	Provide high quality documentation		
Practice PDOC-1.1	Create development documentation	Mandat ory	Mandator y
LookFor	Check the availability of requirements specification Check the availability of high level design / product architecture Check the availability of detailed design Check the availability of technical documentation (e.g. for use in debugging) Check the availability of workflow guidelines (for checking, testing...)		
Practice PDOC-1.2	Create user documentation	Mandat ory	Mandator y
LookFor	Check the availability of a user's guide Check the availability of FAQ documents Check the availability of training material on how to use the product (Multimedia reach material)		

- The assessment framework offers two possibilities:
 - The assessment team has **free access** to all development documentation, process documents, development teams for interviews.
 - The assessment team has **limited access** to the development documentation, process documents and development teams. This leads to a **partial assessment**.

- The second situation may arise when a FLOSS project in the public domain is assessed long after the product has been released and the development team and / or documentation is no more available.
- OMM and the assessment framework are primarily intended to serve the **first** possibility

- The central part of the framework is the assessment process itself.
- Guidelines like the questionnaire, restrictions like scope and goal of assessment and roles/responsibilities are needed to support the assessment process.
- A report is then prepared, as we will present in the following slides



Rating Profile

TWE

- Typical OMM **evolution actors**



- **OPG** – OPG is the OMM steering group
- **Specialist Groups** – While OPG are the equivalent of “administrators” in Open Source Projects, Specialist groups are the “committers” of the model.
- **General users and contributors** – All OMM users might be considered as potential contributors
- **OMM Sponsors** – An additional support can eventually be contributed by future projects funded either by commercial companies or public bodies that will focus on the further development of OMM.

