The OW2 Market Readiness Levels
Improving Productivity and Market Readiness of OW2 projects

Methodology Summary on the OW2 CROSSMINER Use Case

Cedric Thomas, OW2
Reminder: From Data to Market Readiness Levels

Fully Supported Product (useful)

Rough Code (useless)
CROSSMINER-Based Architecture

- **CROSSMINER**
  - Data Collectors
    - GitHub
    - GitLab
    - Jira
    - Mbox
    - SonarQube
    - ScanCode
    - OMM Form
    - MRL Form

- **OW2 (OSCAR)**
  - Data Collectors
    - scava2es (perceval, graal...)

- **Data Collectors**
  - SCAVA
  - ElasticSearch
  - Prosoul
  - Kibiter
  - XWiki

- **Display**
  - Kibiter dashboard
  - Prosoul modeling
  - MRL display

- **OW2 DATA SOURCES**
  - projects
  - users

Cedric Thomas, OW2
Two Scenarios

Project scenario

- Helps “customers” and project leaders better understand projects
- Concentrates on project metrics
- Add CROSSMINER metrics to updated OSCAR metrics
- Contributes to Market Readiness Levels

User scenario

- Helps project leaders monitor and understand contributors behaviors
- Concentrates on contributor metrics
- Includes NLP and sentiment analysis
- Produces Kibiter dashboards
OW2 MRL Three-Stage Assessment

- **COM**: Community
- **CTY**: CTY
- **DOC**: DOC
- **ENV**: ENV
- **MGT**: MGT
- **OPN**: OPN
- **DEV**: DEV
- **TST**: TST
- **REL**: REL
- **SEC**: SEC

**Metrics**
- Activity
- Community
- Sustainability
- Legal
- Quality

**Scoring**
- Established Player
- Actively Competitive
- Business build up
- Market Broadening
- Market Opening
- Usefulness
- Demonstrated
- Fledgeling Usefulness
- Development
- Research

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**Stage 1 Best Practices Mapping**

- **Project Communication**: Willingness and ability of the project to communicate, to be easy to deal with.
- **Project Community**: Status of the community and mechanisms that support third party contributions.
- **Project Documentation**: Documentation facilitating usage of the project and contribution to it.
- **Development Environment**: Provisioning of development resources and facilitation of bug reports and commits contribution.
- **Project Organisation and Mgt**: Management of requirements and planning and estimates of project activities.
- **Project Openness**: Open source compliance of the project and use and implementation of open standards and open technologies.
- **Development Process**: Development practices that help improve code quality.
- **Testing Process**: Provisioning, implementation quality and maintenance of the testing process.
- **Release Management**: Enablement and maintenance of the integrity of the product and its releases.
- **Security and Vulnerability Mgt**: Attention to security vulnerabilities, mechanisms and resources to deal with them.
## Testing Process

Provisioning, implementon quality and maintenance of the testing process.

<table>
<thead>
<tr>
<th>TST-1</th>
<th>The project applies at least one static code analysis tool to any proposed major production release of the software before its release, if there is at least one FLOSS tool that implements this criterion in the selected language.</th>
<th>Status: No Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST-2</td>
<td>The project uses at least one automated test suite that is publicly released as FLOSS.</td>
<td>Status: No Yes</td>
</tr>
<tr>
<td>TST-3</td>
<td>The project can provide evidence that the test results are documented and available.</td>
<td>Status: No Yes</td>
</tr>
<tr>
<td>TST-4</td>
<td>The project can provide evidence that the test plan covers different testing approaches.</td>
<td>Status: No Yes</td>
</tr>
<tr>
<td>TST-5</td>
<td>The project can provide evidence that each release has its own test suite.</td>
<td>Status: No Yes</td>
</tr>
</tbody>
</table>

Optional checkpoints: These additional checkpoints add to the project's market readiness.

<table>
<thead>
<tr>
<th>TST-6</th>
<th>The project uses STAMP tools to increase confidence in unit testing.</th>
<th>Status: No Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST-7</td>
<td>The project uses STAMP tools to test different software configurations.</td>
<td>Status: No Yes</td>
</tr>
</tbody>
</table>
Stage 2 Modeling with Prosoul

Bitergia

Cedric Thomas,
Developing the OW2 Model

QualityModel: OW2-MRL:CMR-v0.1.9

<table>
<thead>
<tr>
<th>Goals</th>
<th>Attributes</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRL_Activity</td>
<td>Activity_Bugs_CMRR Activity_OMM Activity_OpenHub Community_OMM Community_OpenHub Community_Polarity_CMRR Community_Users_CMRR Compliance_IPR_OMM Compliance_Number_of_UniqueLicenses Compliance_Percent_FilesWithoutLicense Quality_Code_CMRR Quality_Good_Smells_CMRR Quality_Metrics_CMRR Quality_QUAL_OMM Quality_SonarQ_Issues Quality_SonarQ_Test_Coverage Quality_SonarQ_Test_Success Quality_Unanswered_Bugs_CMRR Sustainability_CMRR Sustainability_OMM</td>
<td>Blocker_issue Critical_Issue Test_Coverage Test_Success OMM_DOC OMM_ENV OMM_DEV OMM_TST OMM_REL OMM_SEC Depth_of_Inheritance_Tree (max) Unanswered_Bugs Unit_Test_Coverage Loose_CLASS_Cohesion (Java)(Max) Lack_of_Cohesion_in_Methods (variant 4 LOC over files over time Method_Hiding_Factor (Java) Polymorphism_Factor (Java) Tight_CLASS_Cohesion (Java) OMM_COM</td>
</tr>
</tbody>
</table>
The OW2 Model (provisional)

MRL Quality
MRL Activity
MRL Compliance
MRL Community
MRL Sustainability
MRL Activity and MRL Compliance

- MRL_Activity
  - Activity_OMM
  - Activity_OpenHub
  - Activity_Bugs_CMR

- MRL_Compliance
  - Compliance_Number...
  - Compliance_Percen...
  - Compliance_IPR_OMM

- OMM_COM
- OMM_CMM
- openhub activity
- Unanswered Bugs (activity)
- Average Response Time (s)
- Open time (days)
- Unique_Lic
- Files_No_Lic
- Number_Files
- OMM_OPN
MRL Community and MRL Sustainability

- Community_OMM
- Community_Polarit...
- Community_Users_C...
- Community_OpenHub

- MRL_Community

- Sustainability_OMM
- Sustainability_CMR

- MRL_Sustainability

- OMM_CMM
- OMM_MGT
- Joy_Emotion
- Anger_Emotion
- Average sentiment on bugs
- Unanswered Bugs
- open-hub-one-year-contributor-count
- OMM_DOC
- OMM_REL
- OMM_SEC
- OMM_COM
- OMM_CMM
- OMM_MGT
- Average Sentiment_(bugs)
## Stage 3 Market Readiness Scoring

<table>
<thead>
<tr>
<th>Form ID</th>
<th>Attributes</th>
<th>Variable</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRL-1</td>
<td>Product establishment</td>
<td>mrl-prod</td>
<td>No-user, R&amp;D, POC</td>
<td>Early users</td>
<td>UI and Interoperability</td>
<td>Full Q&amp;A, Doc etc.</td>
<td>Product Range</td>
<td>Platform Sub-Project Generation</td>
</tr>
<tr>
<td>MRL-2</td>
<td>Financing</td>
<td>mrl-fin</td>
<td>R&amp;D subsidies</td>
<td>No commercial financing</td>
<td>Fledgedging financing</td>
<td>Fledgedging and some customer</td>
<td>Appropriate financing</td>
<td>Generates own financing</td>
</tr>
<tr>
<td>MRL-3</td>
<td>Customer base</td>
<td>mrl-cust</td>
<td>No Customers</td>
<td>Users, no real customers</td>
<td>early customer base</td>
<td>early customer base</td>
<td>growing customer base</td>
<td>established customer base</td>
</tr>
<tr>
<td>MRL-4</td>
<td>Repeat sales</td>
<td>mrl-sale</td>
<td>no repeat sales</td>
<td>fledgeling sales</td>
<td></td>
<td></td>
<td>sales from new customers</td>
<td>repeat business from customer base</td>
</tr>
<tr>
<td>MRL-5</td>
<td>Market recognition</td>
<td>mrl-reco</td>
<td>No market recognition</td>
<td>Basic communicatio n</td>
<td>Developing marketing</td>
<td>Active marketing</td>
<td>Market recognition</td>
<td>Leadership recognition</td>
</tr>
<tr>
<td>MRL-6</td>
<td>Community maturity</td>
<td>mrl-com</td>
<td>Research partners</td>
<td>Open source license</td>
<td>Declared open source project</td>
<td>Active OSS project leader</td>
<td>Third party contributors</td>
<td>Active project community</td>
</tr>
</tbody>
</table>
## Market Readiness Levels

<table>
<thead>
<tr>
<th>“flight proven”</th>
<th>Established player</th>
<th>Established product with properly financed and organized Business support, Customer base, Repeat sales and Market recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>“flight qualified”</td>
<td>Actively competitive</td>
<td>Early customer base, appropriate financing or active community support, recognized software</td>
</tr>
<tr>
<td>“prototype in space”</td>
<td>Business build-up</td>
<td>Early customer base and fledgeling financing or active community support</td>
</tr>
<tr>
<td>“proven demo”</td>
<td>Broadening market</td>
<td>Proven product recent, market opening, untested governance</td>
</tr>
<tr>
<td>“relevant envt validation”</td>
<td>Opening market</td>
<td>Some customers recent, market opening, un-proven governance</td>
</tr>
<tr>
<td>“Lab validation”</td>
<td>Usefulness verified</td>
<td>Several users, project leadership well established</td>
</tr>
<tr>
<td>“proof of concept”</td>
<td>Fledgling usefulness</td>
<td>One declared user (can be internal) with declared project leader</td>
</tr>
<tr>
<td>“application formulation”</td>
<td>Product development</td>
<td>Basic R&amp;D code developed with one demonstrated use case, some documentation</td>
</tr>
<tr>
<td>“Basic principles”</td>
<td>Basic early stage</td>
<td>Basic R&amp;D code developed</td>
</tr>
</tbody>
</table>
Computing the Score

Self declared form

Metrics from the platform

Expert evaluation

Stage 1

Stage 2

Stage 3

Best Practices Mapping

Attributes Rating

Market Readiness Scoring

COM
CTY
DOC
ENV
MGT
OPN
DEV
TST
REL
SEC

Established Player
Actively Competitive
Business build up
Market Broadening
Market Opening
Usefulness
Demonstrated
Fledgling Usefulness
Development
Research
Summary

- Composite index to help promote OW2 projects
- Leverage OW2 platform and tools
- CROSSMINER technologies added
- Three-stage evaluation approach
- Work in progress
Thank You

And now let's talk
Q&A
Disagreements
Complements
Feedback
etc.

For more details please contact Cedric Thomas, OW2 CEO, cedric.thomas@ow2.org