OSS Projects Market Readiness Assessment

Open Project and (Kind of) Request For Comments

Cedric Thomas, OW2

FOSS Backstage

Berlin, 13-14 June, 2018
Open Source for the Business Decision Maker
Programmers Write Code

```python
def goTo(anActorReference, aPointToGoTo, aSpecifiedActorPosition = scenario.GetPosition(anActorReference), succeed = 0): succeed = 0
    return succeed

def goMark(anActorReference, aMark = scenario.GetData(aPointToGoTo), succeed = 0): succeed = 0
    return succeed

def goPath(anActorReference, aPathToFollow, succeed = 0): succeed = 0
    return succeed

@@ -34,8 +34,7 @@ buildscript {
apply plugin: "info.solidsoft.pitest"
    
    test {
+        targetClasses = ['myWorld*']
+        mutationEngine = "descartes"
    }

```
Customers Want Products

Market Value

Developer
Code
POCs
Use-cases
Demonstrators
Doc. Tutos.
Testing
Upgrades
Bug-fixing
Training
Support
Packaging
Case studies
Collateral
Pricing
Contracts
Early adopters
Partners
Complements
Etc.

Research & Development

Delivery Challenge

Customer
Predictability
Quality
Trust
OSS
The Ecosystem Generates Value

Market Value

Developer
- Code
- POCs
- Use-cases
- Demonstrators

- Doc. Tutos.
- Testing
- Upgrades
- Bug-fixing
- Training
- Support
- Packaging
- Case studies
- Collateral
- Pricing
- Contracts
- Early adopters
- Partners
- Complements
- Etc.

Predictability
- Quality
- Trust

Customer

Contributors

Systems Integrators

Distrib. Vendors

Open Source Orgs.

Fiduciary Services

Users

Research & Development

Challenge
From Data to Analysis to Decision
80% to 90% of a typical application is composed of components.

Source: Sonatype, DevSecOps Community Survey, 2018
The Busy Landscape of OSS Metrics

Qualipso
SQOoSS
OSSMeter
riscOSS
FLOSSM@trics
FOSSA
edos
CROSSMINER
Qualoss
EU Collab. Projects

OW2 OMM forms
OPENCHAIN
spago4Q
Bitergia
BLACKDUCK | Open HUB

Reuse Readiness Levels (RRLs)

Industry

QOSOS
NASA
OW2
THE LINUX FOUNDATION
CHAOS
BLACKDUCK | Open HUB

Static analysis

OW2

Qualitative analysis

SonarQube
GCC MELT
Cppcheck
mancoosi

CI/Testing

Jenkins

Crowd testing

OSSMetrics
OW2

IP analysis

DejaCode
texB

Standardization bodies

SPICE
CISQ
CMMI

ISO/IEC 15504
Consortium for IT Software Quality

OW2 2018

Cedric Thomas
OW2 OSCAR

- A methodology and a platform
- Quality assessment tools
- Raw data + risk assessment models
- Transparent information on projects
- Check-list of best practices to reach market maturity
When a Lot of Data Can Be Too Much Data
Toward a Synthetic Indicator

Established Product (useful)

Rough Code (useless)
NASA's Technology Readiness Levels

A type of measurement system used to estimate the maturity level of a particular technology

- In technology, there are usually nine readiness levels. TRL 1 is the lowest and TRL 9 is the highest.

- A TRL number is obtained once the description has been achieved.
  - For example, successfully achieving TRL 4 does not move the technology to TRL 5.

- Pioneered by NASA in the 80’s.
  - Adopted by the DOE and DOD for procurement and management of complex systems.
NASA/DOD Technology Readiness Level

- **TRL 9**: Actual system “flight proven” through successful mission operations
- **TRL 8**: Actual system completed and “flight qualified” through test and demonstration (Ground or Flight)
- **TRL 7**: System prototype demonstration in a space environment
- **TRL 6**: System/subsystem model or prototype demonstration in a relevant environment (Ground or Space)
- **TRL 5**: Component and/or breadboard validation in relevant environment
- **TRL 4**: Component and/or breadboard validation in laboratory environment
- **TRL 3**: Analytical and experimental critical function and/or characteristic proof-of-concept
- **TRL 2**: Technology concept and/or application formulated
- **TRL 1**: Basic principles observed and reported
OW2 OSS Market Readiness Template

- "flight proven"
- "flight qualified"
- "prototype in space"
- "proven demo"
- "relevant envt validation"
- "Lab validation"
- "proof of concept"
- "application formulation"
- "Basic principles"

Established player
- Established product with properly financed and organized Business support
- Customer base, Repeat sales and Market recognition

Actively competitive
- Early customer base, appropriate financing or active community support, recognized software

Business build-up
- Early customer base and fledgeling financing or active community support

Broadening market
- Proven product recent, market opening, untested governance

Opening market
- Some customers recent, market opening, un-proven governance

Usefulness verified
- Several users, project leadership well established

Fledgling usefulness
- One declared user (can be internal) with declared project leader

Product development
- Basic R&D code developed with one demonstrated use case, some documentation

Basic early stage
- Basic R&D code developed
Developing This Collaboratively
Defining Metrics

1- Metrics

- Comparable
- Sources
- Lists
- Extensions
- Updates
- Formats
Collecting Data

1- Metrics
- Comparable
- Sources
- Extensions
- Updates

2- Collectors
- Integration
- Automation
- Updates
- Forms

Comparable, Sources, Extensions, Updates, Formats, Lists
Processing Data

1- Metrics
- Comparable
- Sources
- Extensions
- Updates

2- Collectors
- Formats
- Integration
- Automation
- Updates

3- Models
- OW2:MRL
- OSCAR
- Normalisation
- Updates

Comparable
Sources
Extensions
Updates
List
Formats
Integration
Automation
Updates
Forms
Normalisation
Updates
OW2:MRL
OSCAR
Publishing Results

1- Metrics
- Comparable
- Sources
- Extensions
- Updates
- Lists
- Formats

2- Collectors
- Integration
- Automation
- Updates
- Forms

3- Models
- OW2:MRL
- OSCAR
- Normalisation
- Updates

4- Output
- Representation
- Webpages
- Feedbacks

Sources
Lists
Formats
Updates
Automation
Normalisation
Representation
Webpages
Feedbacks
Reaching Out

1- Metrics
- Comparable
- Sources
- Extensions
- Updates
- Lists
- Formats

2- Collectors
- Integration
- Automation
- Updates
- Forms

3- Models
- OW2:MRL
- Updates
- OSCAR
- Normalisation

4- Output
- Webpages
- Feedbacks
- Representation

5- Communication
- Tutorials
- Presentations
- Collaterals
- Endorsements
Questions, Challenges and Pitfalls

- **Metrics**: Possible vs Workable
  - Criteria list must be manageable
- **Project support**: Community vs For-Profit
  - One rationale fits all?
- **Perspective**: Engineering vs Business
  - End-user angle is the new thing
- **Context**: Scientific vs Enterprise
  - Different worlds evaluated differently?
- **Process**: Data collectors vs Forms
  - Some of it will be manual
- **Rationale**: Measurement vs Evaluation
  - Measurable facts vs Opinions
- **Data**: Snapshot vs Updates
  - Static or dynamic assessment
- **Representation**: Levels vs Radar Vs Status
  - Avoid hierarchies
Collaboration Outlook

- **Infrastructure**
  - https://oscar.ow2.org/view/MRL/
  - Wiki, web pages
  - Mailing list

- **Research**
  - References
  - Dashboard representation

- **Stakeholders**
  - Involve actual users and project leaders
  - Set-up advisory board
  (Developers, VCs, Academics, Users)
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