API value chain

In the context of a software ecosystem

- Attract developers
- Attract end-users
Background: APIs and Cognitive Dimension


Conceptual Flow

Business drivers
Ecosystem characteristics
Ecosystem Scope
Ecosystem strategy
Ecosystem Elements
Relevant Actors & Relationships
Business scenarios (Goals)
Fitness dimensions
Ecosystem Personas
Prioritize
Select
Assess
Tradeoffs
Sensitivity points
Non-risk
Risks
Risk themes
impacts
distilled into
Conceptual Flow

1. **Business drivers**
2. **Ecosystem characteristics**
3. **Ecosystem Scope**
4. **Ecosystem strategy**
5. **Ecosystem Elements**
6. **Relevant Actors & Relationships**
7. **Ecosystem Personas**

- **Write Extension**
- **Platform**
- **Opport. Hobby Developer**
- **Systematic Student Developer**

Distilled into:
- **Impacts**
- **Prioritize Select Assess**
- **Tradeoffs**
- **Sensitivity points**
- **Non-risk**
- **Risks**

Risk themes:
- **Tradeoffs**
- **Sensitivity points**
- **Non-risk**
- **Risks**
Ecosystemability Assessment

Business Scenario (Goal)

Get image from camera
Get image metadata
Compare images
Record video

Developer
has goal
needs to implement
accomplished with

static media_stream * open_capture(void)
{
    media_stream *stream;
    char properties[SIZEOF_PROPERTIES];
    snprintf(properties, SIZEOF_PROPERTIES, CAPTURE_PROPERTIES);
    stream = capture_open_stream(IMAGE_UNCOMPRESSED,properties);
    return stream;
}

static media_frame * new_capture_frame(media_stream *stream)
{
    media_frame *frame = NULL;
    frame = capture_get_frame(stream);
    return frame;
}
Ecosystemability Assessment

- Started with Cognitive Dimension Framework (12 Dimensions)
  - Some Cognitive (e.g. Learning Style)
  - Some Technical (e.g. Consistency)
  - Many missing (e.g. Testing, Security)
Ecosystemability Assessment

- **Sensitivity point**: An API decision that is critical for achieving a particular fitness dimension.
- **Tradeoff point**: A decision about platform API that affects more than one fitness dimension or persona (possibly in opposite ways).
- **Risk**: A decision about platform API that may lead to undesirable consequences.
- **Non risk**: A decision about platform API that is deemed safe.
- **Risk theme**: A general concern of a group of interrelated risks in platform API, assigned its own risk value.
Assessment Tool

<table>
<thead>
<tr>
<th>Persona</th>
<th>Client application developer, opportunistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority</td>
<td>2 (scale: 1-5, 1 = low, 5 = high)</td>
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</tbody>
</table>

**Goal**
- Recording a short video to the SD Card whenever a movement is detected
- Priority 4 (scale: 1-5, 1 = low, 5 = high)

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**Example**
- Network attached camera
- Developer adds capability

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**Table**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Abstraction level</th>
<th>Learning style</th>
<th>Working framework</th>
<th>Progressive evaluation</th>
<th>Premature commitment</th>
<th>API elaboration</th>
<th>APIs viscosity</th>
<th>Consistency</th>
<th>Role expressiveness</th>
<th>Domain correspondence</th>
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<tbody>
<tr>
<td>A</td>
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</tbody>
</table>

**Scale**
- -3 not relevant
- -1 very low
- 0 low
- 1 high
- 3 highly relevant

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**Diagram**

- A: Which style of interaction does the Platform imply?
- B: Which style of interaction does the Persona prefer?
- C: Match of implication and preference.
Conclusion

Thank you!
Eric Knauss
eric.knauss@cse.gu.se
@oerich