Abstract

This article describes what a roadmap is, how to create and maintain a roadmap, the involvement of the stakeholders, and criteria for the structure of a roadmap.
The Roadmap Integrates Five Views

- Customer objectives
- Application
- Functional
- Conceptual
- Realization

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Market

Products

Technology

People

Process

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time, ca 5 years

---

drives, requires

supports, enables

---

Marketing

Architect

technology, process

people manager

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October 19, 2018
RSProadmapStructure
<table>
<thead>
<tr>
<th>Granularity of Roadmap Material</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Top-level roadmap</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Supporting roadmaps</strong></td>
</tr>
<tr>
<td></td>
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<tr>
<td><strong>Supporting reports</strong></td>
</tr>
</tbody>
</table>
Problems that Occur without Roadmapping

- Frequent changes in product policy
- Late start up of long lead activities, such as people recruitment and process change
- Diverging activities of teams
- Missed market opportunities
Management with a Limited Horizon

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ROADonOffManagement
Management with a Broader Time Perspective

2012 2013 2104

now feature

now feature

now feature

legend

number of people allocated

time

Preparation by 0.5 person

Work with 1.5 persons

Continue with 0.5 person

Work with 1.5 persons

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Creation or Update of Roadmap in Burst Mode

**Roadmap Phases**

1. **Market**
   - Collective meeting ca 2 days
   - Preparation by expert teams
   - 2 weeks to digest and prepare

2. **Products**
   - Collective meeting ca 2 days
   - 2 weeks to digest and prepare

3. **Technology**
   - Collective meeting ca 2 days
   - 2 weeks to digest and prepare

4. **People**
   - Preparation by expert teams
   - 2 weeks to digest and prepare

5. **Process**
   - Collective meeting ca 2 days
   - 2 weeks to digest and prepare

**Shared Roadmap**
<table>
<thead>
<tr>
<th>Stakeholder Category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Manager(s)</td>
<td>overall enterprise responsible</td>
</tr>
<tr>
<td>Marketing Manager(s)</td>
<td>discipline or line managers</td>
</tr>
<tr>
<td>People, Process, and Technology Manager(s)</td>
<td></td>
</tr>
<tr>
<td>Operational Manager(s)</td>
<td>project or program managers</td>
</tr>
<tr>
<td>Architect(s)</td>
<td></td>
</tr>
</tbody>
</table>
Shared vision on market

First iteration of possible products as an answer to the market

Share technology status, as starting point for technology roadmap

Explore people and technology status, to identify main issues
Target of the Second Session

Obtaining a shared vision on the desired technology roadmap

Sharing the people and process issues required for the products defined in the first iteration

Analyzing a few scenarios for products, technologies, people, and process
## The Roadmap Update Visualized in Time

| **Market:** What is needed by the customers? |
| **Technology:** What technological trends are relevant? What technologies are needed? |
| **Products:** How to package technologies into products to fulfill market needs? |
| **People:** What kind of and how many people are required to realize the products and technologies? |
| **Process:** What processes are required to let these people realize the products and technologies? |

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ROADsequence

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[Diagram shown: time line with boxes for Market, Technology, Products, People, and Process, each with a question related to their role in the roadmap.]
From Roadmap to Detailed Plans

201X

roadmap n

roadmapping

201Y

roadmap n + 1

Policy and Planning Process

business plan: budget & allocation

budget

Q1 delta

Q2 delta

Q3 delta

Q4 delta

Product Creation Process

detailed planning

market events

tech hurdle

market events

tech hurdle

tech hurdle

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ROADbudgetPlan

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### 3-Tier Approach

<table>
<thead>
<tr>
<th>Roadmap</th>
<th>Horizon</th>
<th>Update</th>
<th>Scope Type</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>budget</td>
<td>1 year</td>
<td>3 months</td>
<td>program</td>
<td>commitment</td>
</tr>
<tr>
<td>detailed plan</td>
<td>1 mnth-1yr</td>
<td>1 day-1 mnth</td>
<td>program or activity</td>
<td>control means</td>
</tr>
</tbody>
</table>

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ROADplanningTiers
Selection of most important or relevant issues
Key drivers as a means to structure the roadmap
Nothing is certain; ambiguity is normal
Use facts whenever possible
Don’t panic in case of impossibilities
Requirements for a Good Roadmap

Recognizable issues for all stakeholders

Clear positioning in time; uncertainty can be visualized

The main events (enabling or constraining) must be present

Limited amount of information to maintain the overview
Sources of Facts

Market analysis reports
- number of customers, market size, competition, trends

Installed base
- change requests, problem reports, historical data

Manufacturing (statistical process control)
- statistical process control

Suppliers (roadmaps, historical data)
- roadmaps, historical data

Internal reports (technology studies, simulations)
- technology studies, simulations
Causes for Overestimation

Quantization effects of small activities (the amount of time is rounded to manweeks/months/years)

Uncertainty is translated into margins at every level (module, subsystem, system)

Counting activities twice (e.g., in technology development and in product development)

Quantization effects of persons/roles (full time project leader, architect, product manager, et cetera per product)

Lack of pragmatism (technical ambition is not too bad during the roadmap process, as long as it does not pre-empt a healthy decision)

Too many bells and whistles without business or customer value