

# Roadmapping

by *Gerrit Muller* University of South-Eastern Norway-NISE

e-mail: [gaudisite@gmail.com](mailto:gaudisite@gmail.com)

[www.gaudisite.nl](http://www.gaudisite.nl)

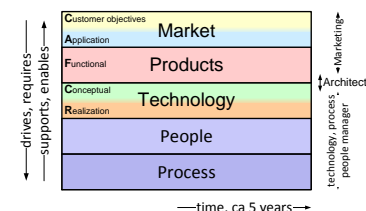
## Abstract

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.

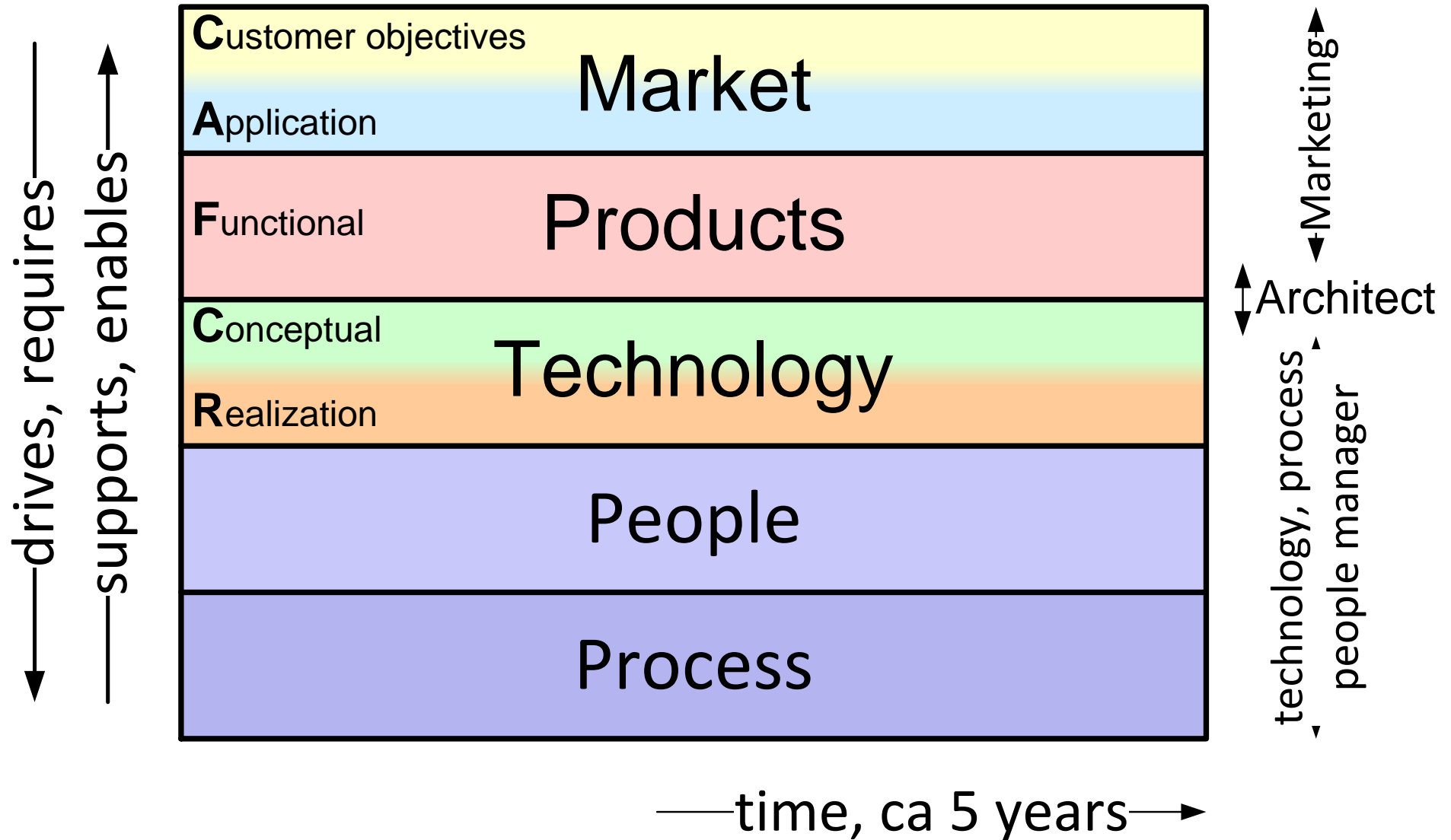
## Distribution

This article or presentation is written as part of the Gaudí project. The Gaudí project philosophy is to improve by obtaining frequent feedback. Frequent feedback is pursued by an open creation process. This document is published as intermediate or nearly mature version to get feedback. Further distribution is allowed as long as the document remains complete and unchanged.

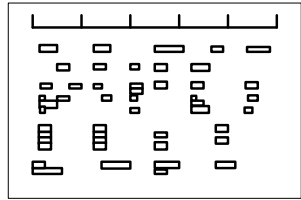
October 19, 2018  
status: concept  
version: 2.0



# The Roadmap Integrates Five Views



# Granularity of Roadmap Material

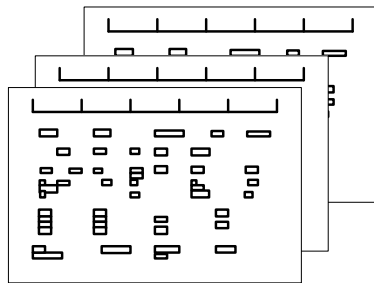


**Top-level  
roadmap**

Single page

Poster

part of many presentations

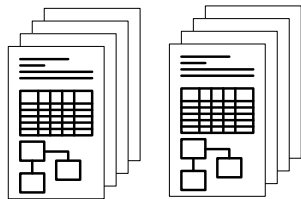


**Supporting  
roadmaps**

Single page  
per view  
or per driver

Poster

part of many presentations



**Supporting  
reports**

Document  
per relevant  
subject

# Problems that Occur without Roadmapping

---

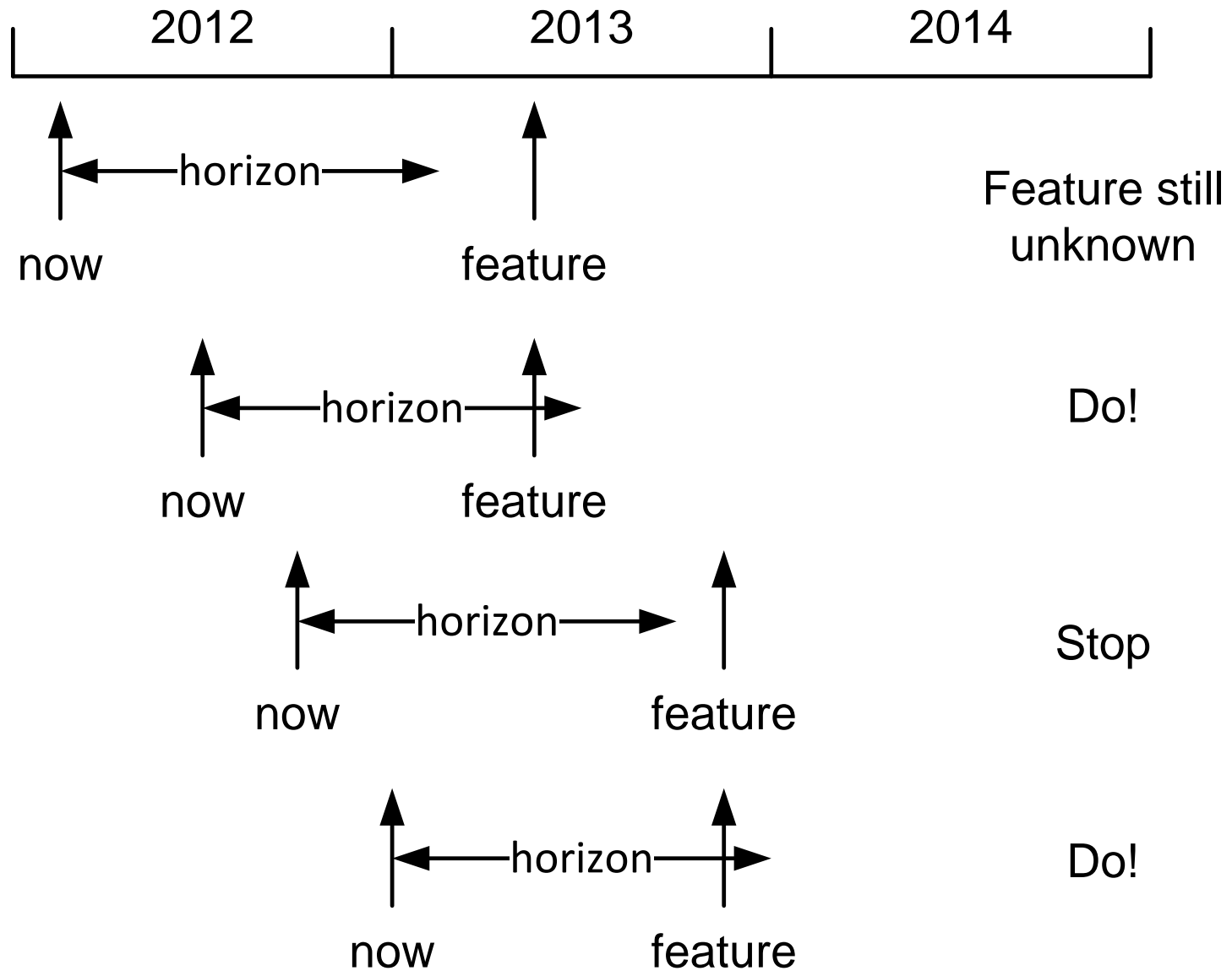
Frequent changes in product policy

Late start up of long lead activities, such as people recruitment and process change

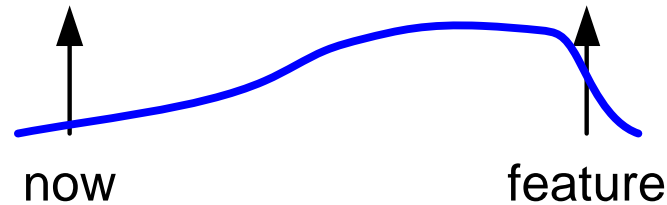
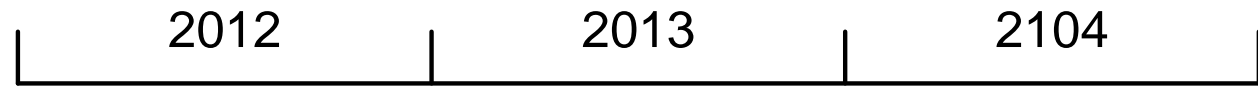
Diverging activities of teams

Missed market opportunities

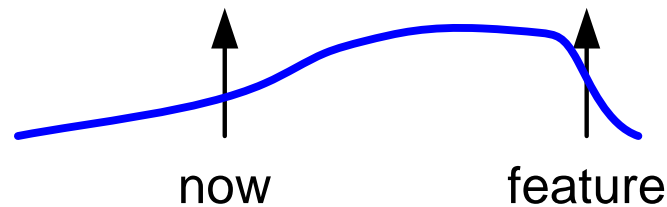
# Management with a Limited Horizon



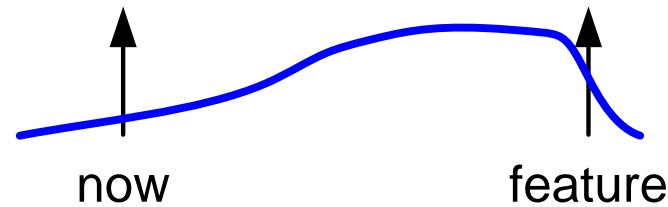
# Management with a Broader Time Perspective



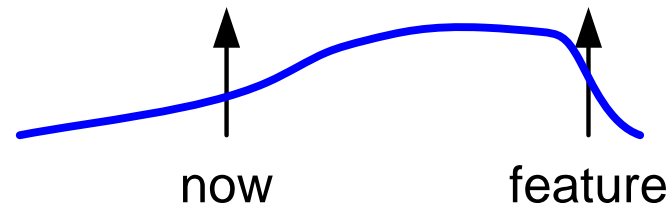
Preparation by  
0.5 person



Work with  
1.5 persons

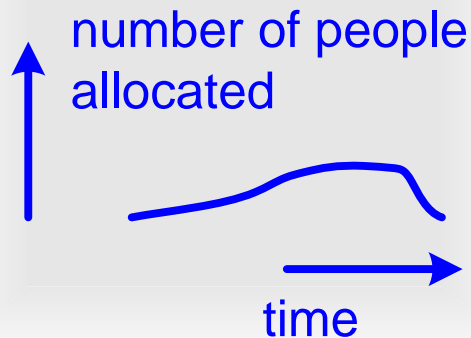


Continue with  
0.5 person

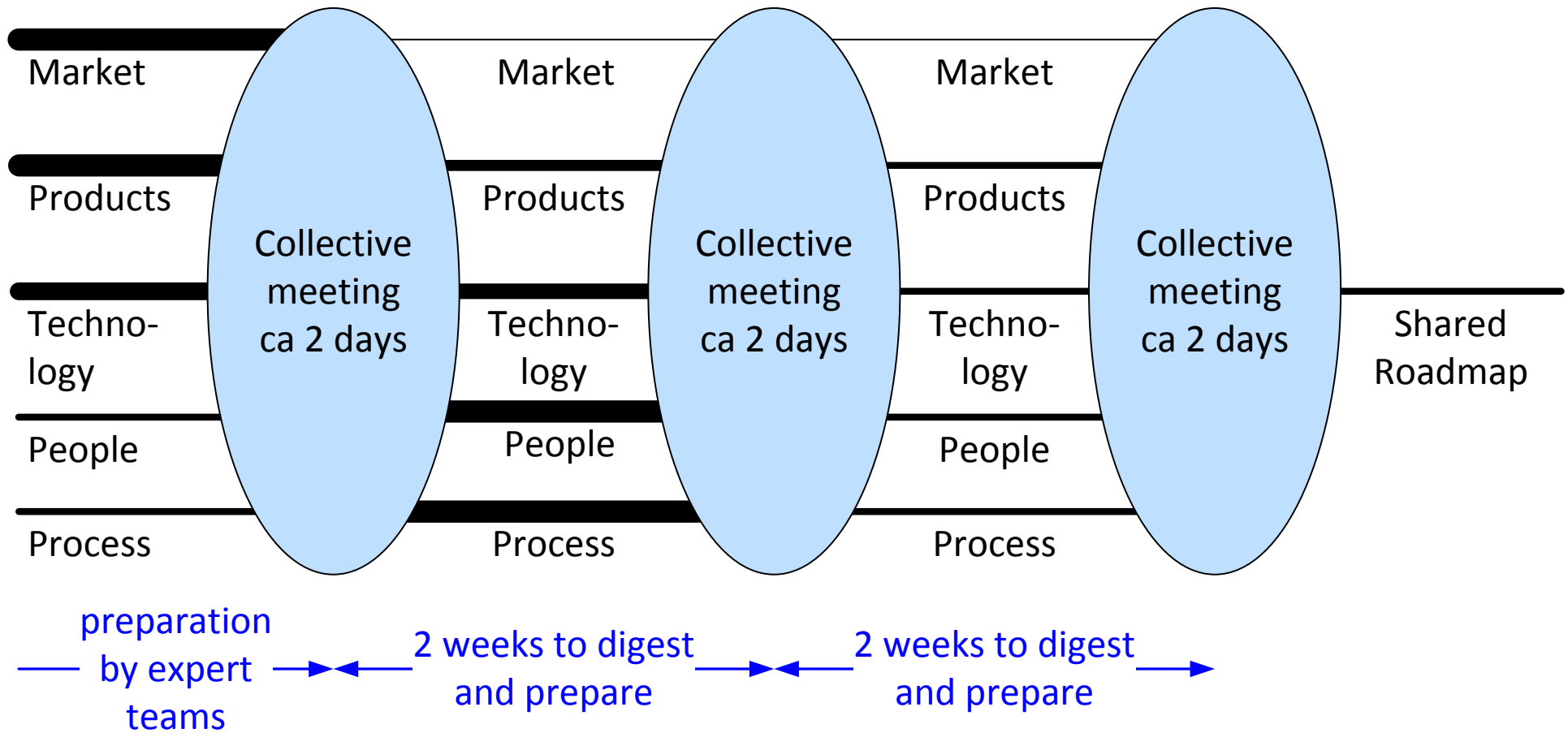


Work with  
1.5 persons

*legend*



# Creation or Update of Roadmap in Burst Mode



# Typical Stakeholders of a Roadmap

business manager overall enterprise responsible

marketing manager(s)

discipline or line managers

people, process, and technology manager(s)

operational manager(s) project or program managers

architect(s)



# Target of the First Session

---

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?

**Products:** How to package technologies into products to fulfill market needs?

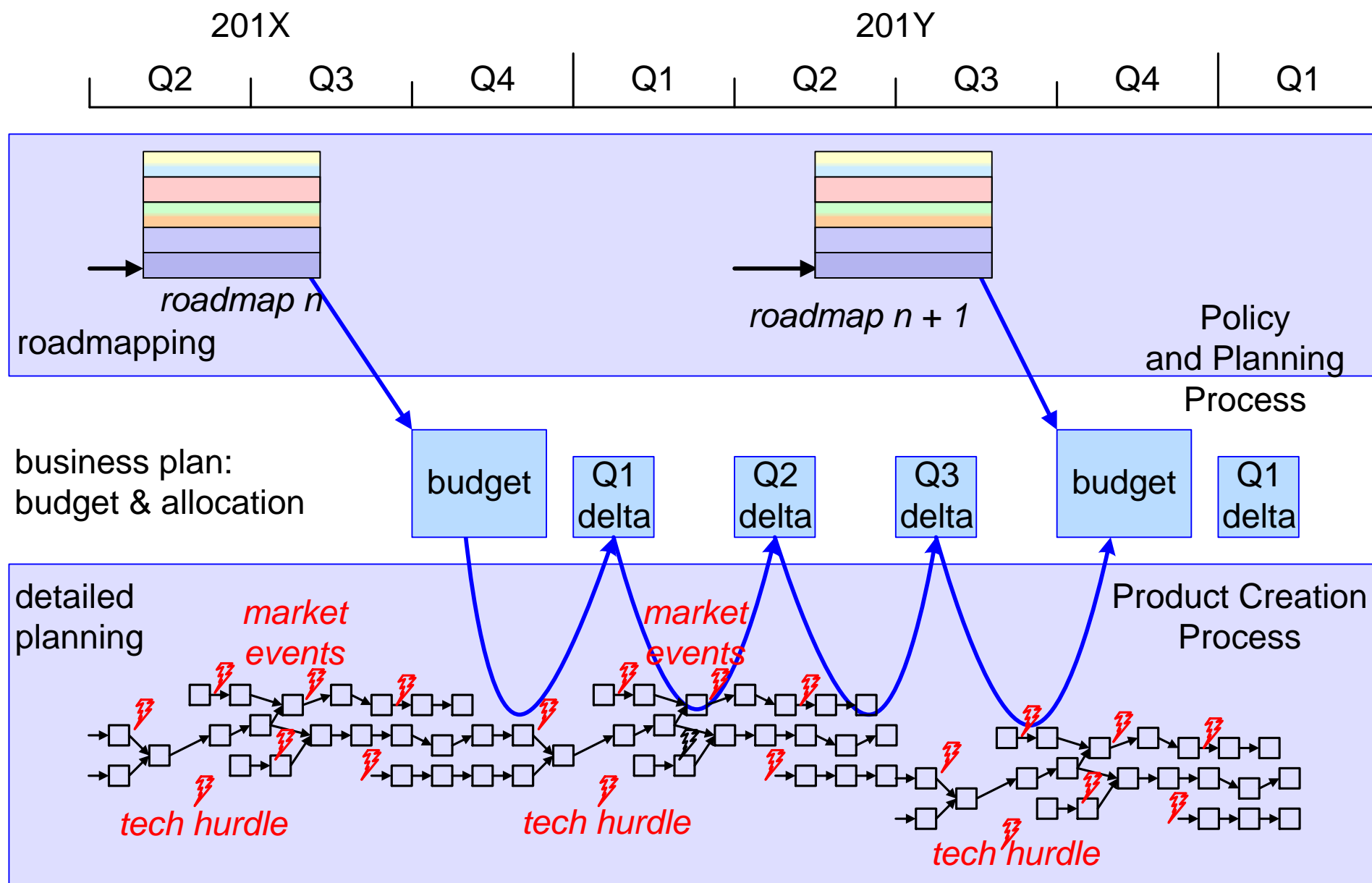
**Technology:** What technological trends are relevant? What technologies are needed?

**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?

—————time—————→

# From Roadmap to Detailed Plans



# 3-Tier Approach

---

	<i>horizon</i>	<i>update</i>	<i>scope</i>	<i>type</i>
roadmap	5 years	1 year	portfolio	vision
budget	1 year	3 months	program	commitment
detailed plan	1 mnth-1yr	1 day-1 mnth	program or activity	control means

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