

Images as Action Instruments in Complex Projects

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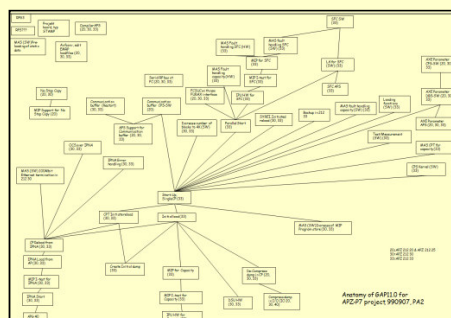
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Background

- Images have always been important in managing projects
 - Gantt, PERT/CPM, WBS, ...
- Traditional images appear to be insufficient in complex projects
- Alternative images have emerged in practice
- More or less ignored by the research community



Anatomy

Knowledge interest

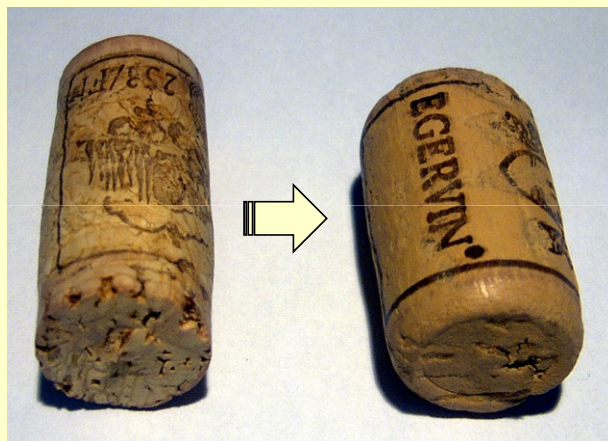
- Reason for the insufficiency of traditional images?
- Qualities of alternative images?
 - What makes them attractive in complex projects?

Point of departure - enactment

“[The enactment view] starts with human action and examines how it **enacts emergent structures** through recurrent interaction with the technology at hand” (Orlikowski, 2000)

Acting in order to evoke meaningful and useful resources in some context

Any idea?



Means, capabilities and resources



Capability
of means



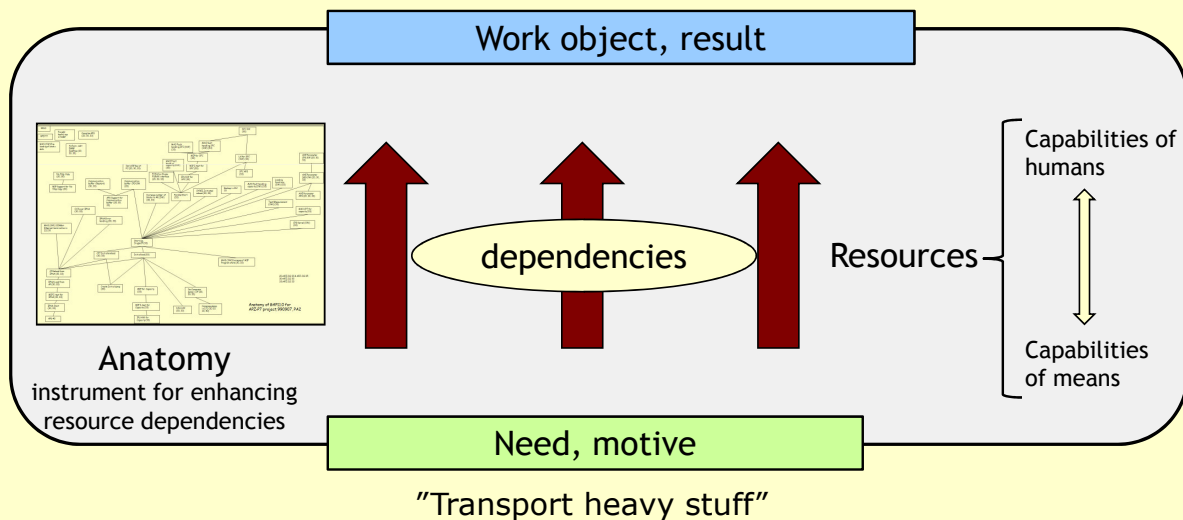
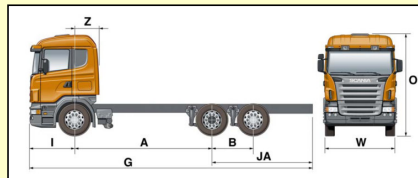
Capability of
human



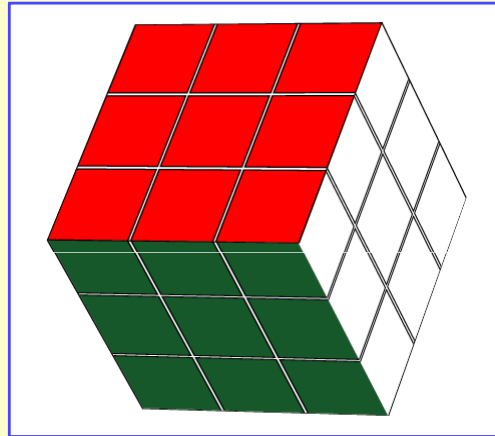
Resource

Resources always related to intentions, goals
Capabilities of humans requires learning
Capabilities depend on the context

Organizations, workpractices, ..



Dimensions of resources



Activity Modalities

- Empirical grounding: observations from industrial projects
- Theoretical grounding: Activity Theory, cognitive sciences

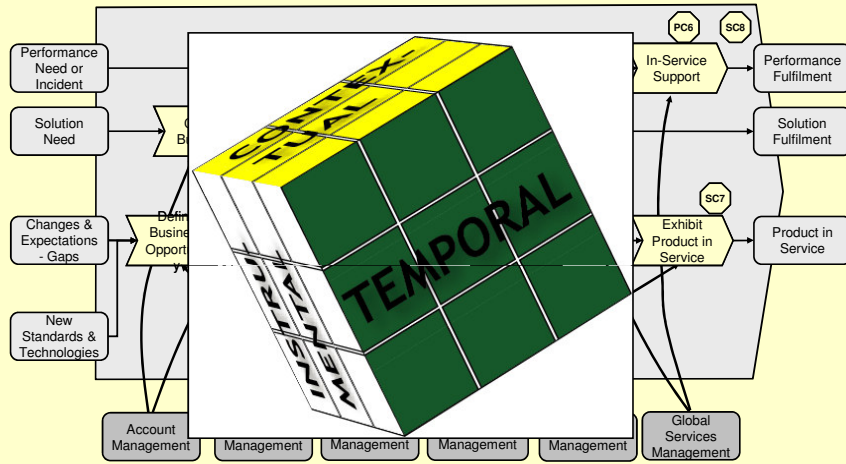
Context dependent



Resource!

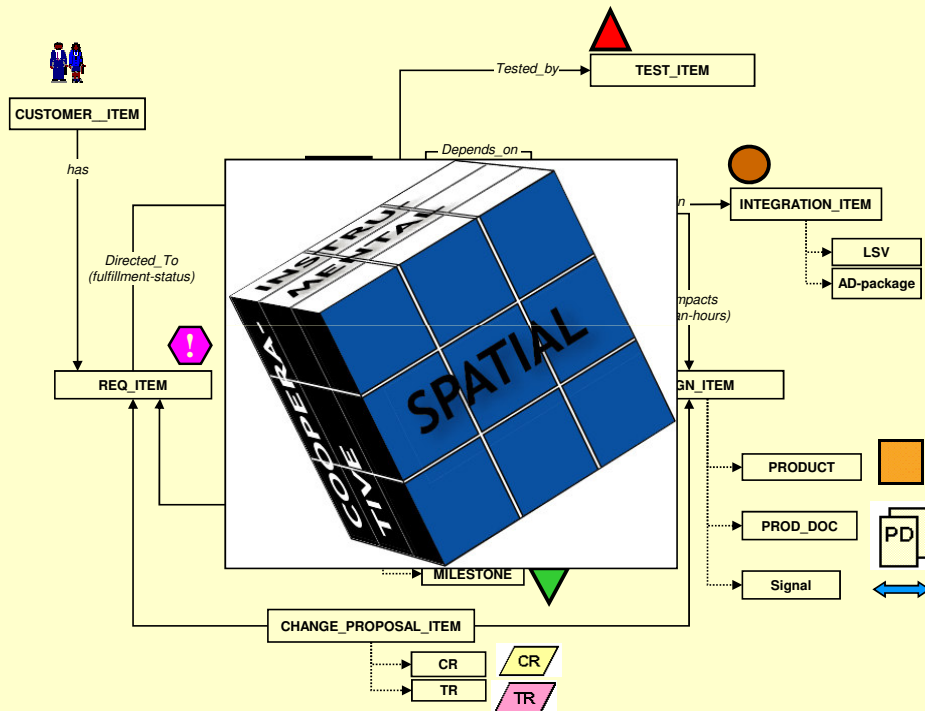
Liability!

Temporally oriented

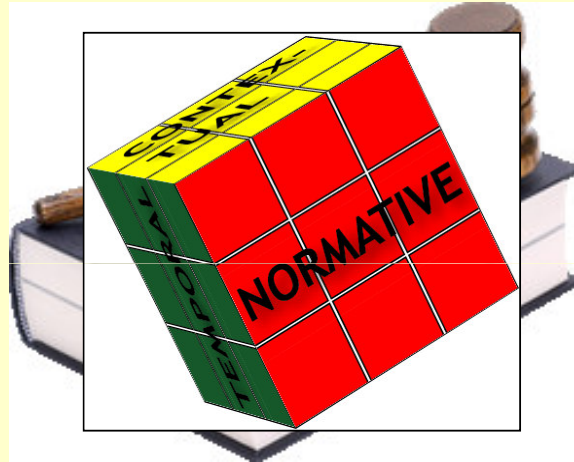


Process model from Ericsson (2000)

Spatially oriented



Regulatory oriented



Law book

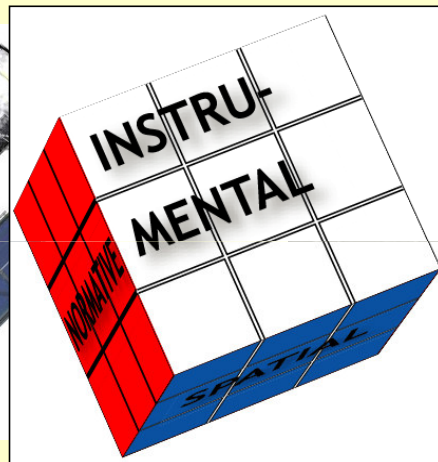
Instrumentally oriented

Hubble telescope



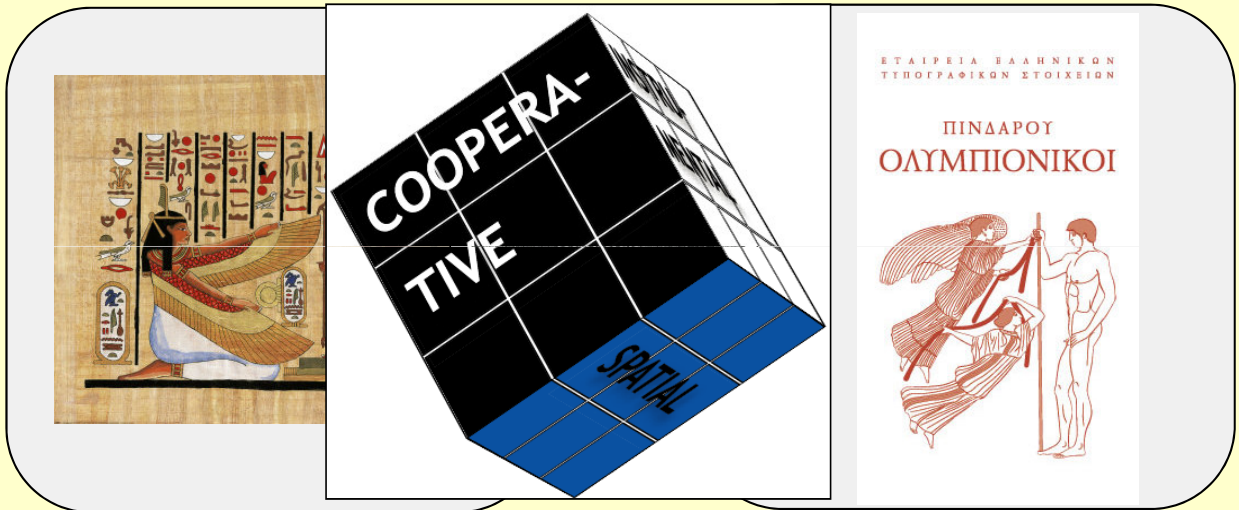
Material character

“Attention!”



Linguistic character

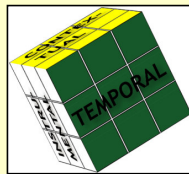
Cooperatively oriented



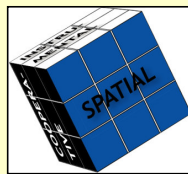
Dimensions of resources - different sides of a unity



Contextual



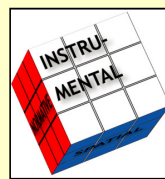
Temporal



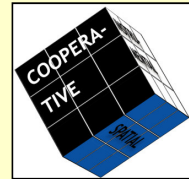
Spatial



Normative



Instrumental



Cooperative

- All dimensions necessary when coordinating actions
- Determined by needs, motive, work object
- Interdependent
- Usually treated one at a time in organizational discourse

In plain English ...

- Actions have a context specific purpose (**contextualization**)
- Actions imply spatial orientation (**spatialization**)
- Actions are carried out in a certain order (**temporalization**)
- Rules, norms, etc., signify valid actions (**normalization**)
- Humans always put something between themselves and their work object (**instrumentation**)
- Societies and work groups need to interact (**cooperation**)

The Golden Gate Bridge project



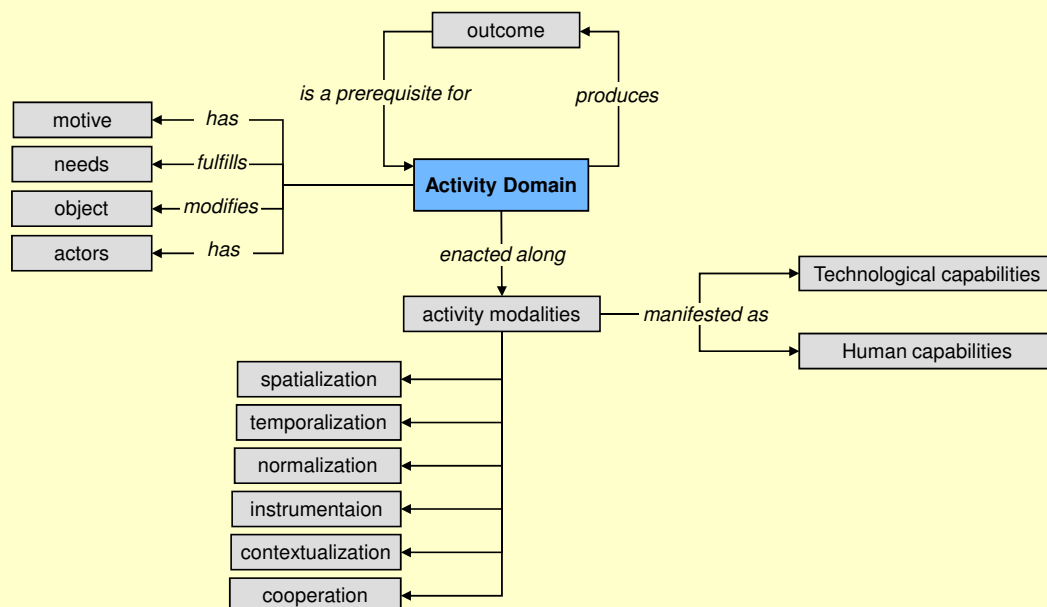
- Need cross the gate, motive for project
- Object bridge
- Actors workers, managers, ...
- Result realized bridge

The Golden Gate Bridge project - Activity Modalities



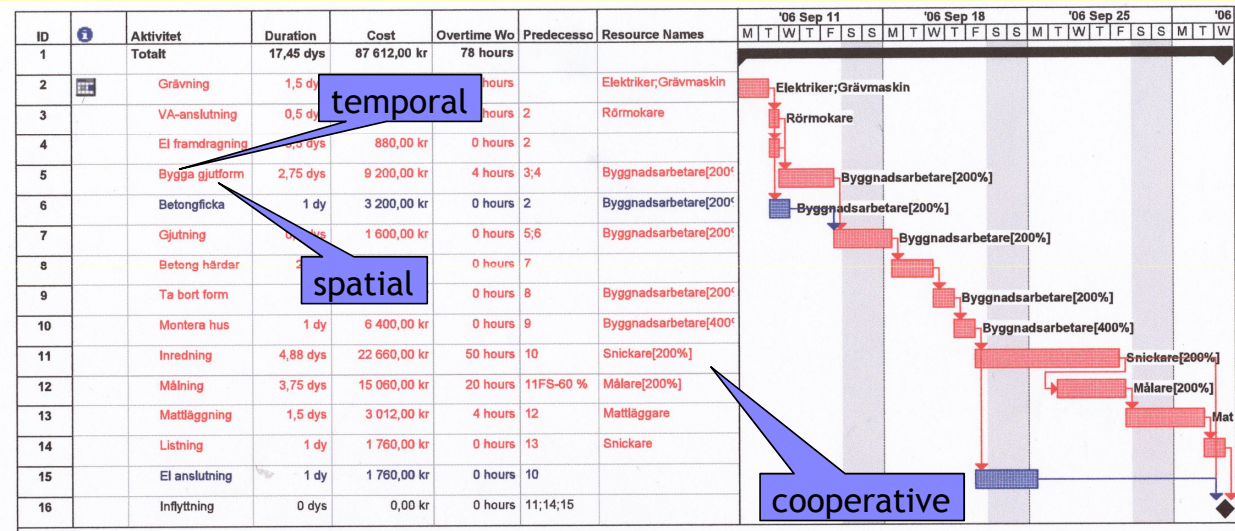
- Contextualization
 - Spatialization
 - Temporalization
 - Normalization
 - Instrumentation
 - Cooperation
- The Golden Gate Bridge project
- Maps, blue-prints,..
- Plans, processes...
- Safety rules, measurement units,
- Dynamite, cable spinning saddles, ...
- Contracts between sub contractors, ...

The Activity Domain Theory

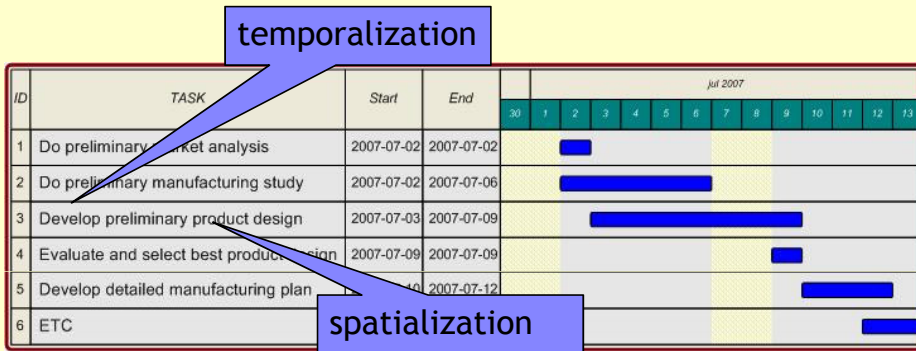


Traditional images

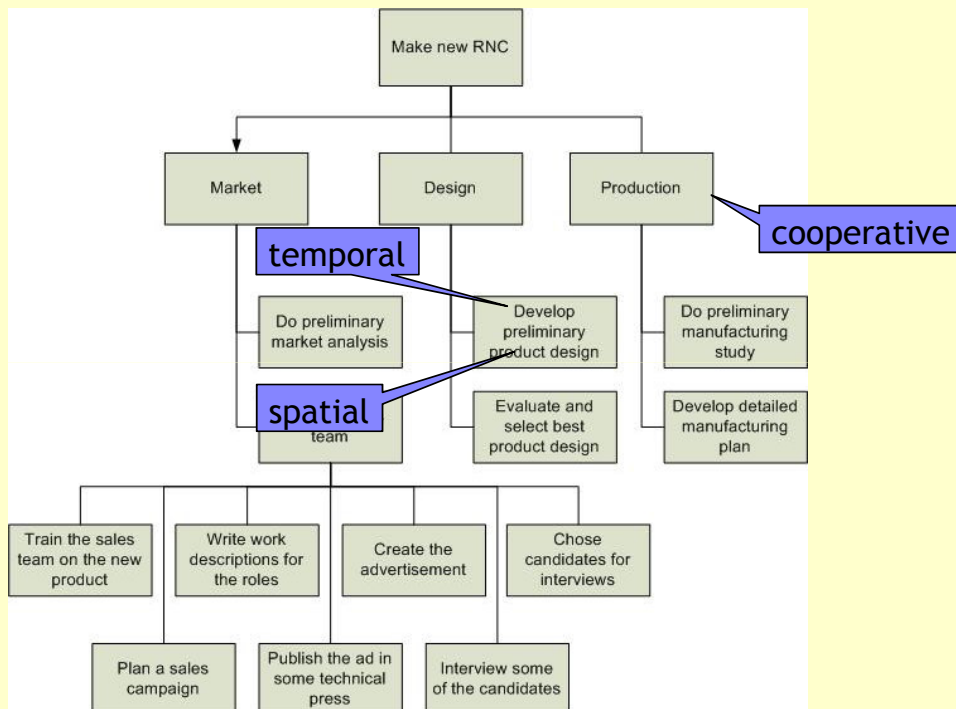
Gantt charts - resource dimensions



Gantt charts - resource dimensions

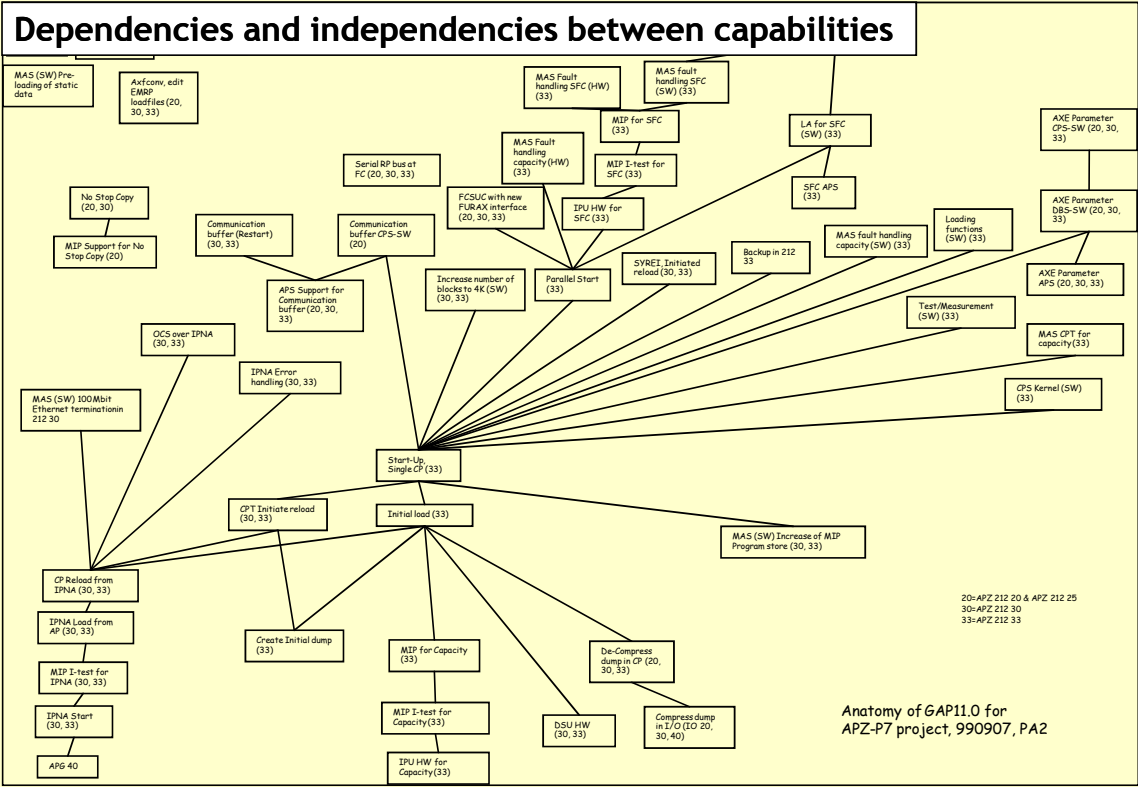


WBS - Product Breakdown Structure (PBS)

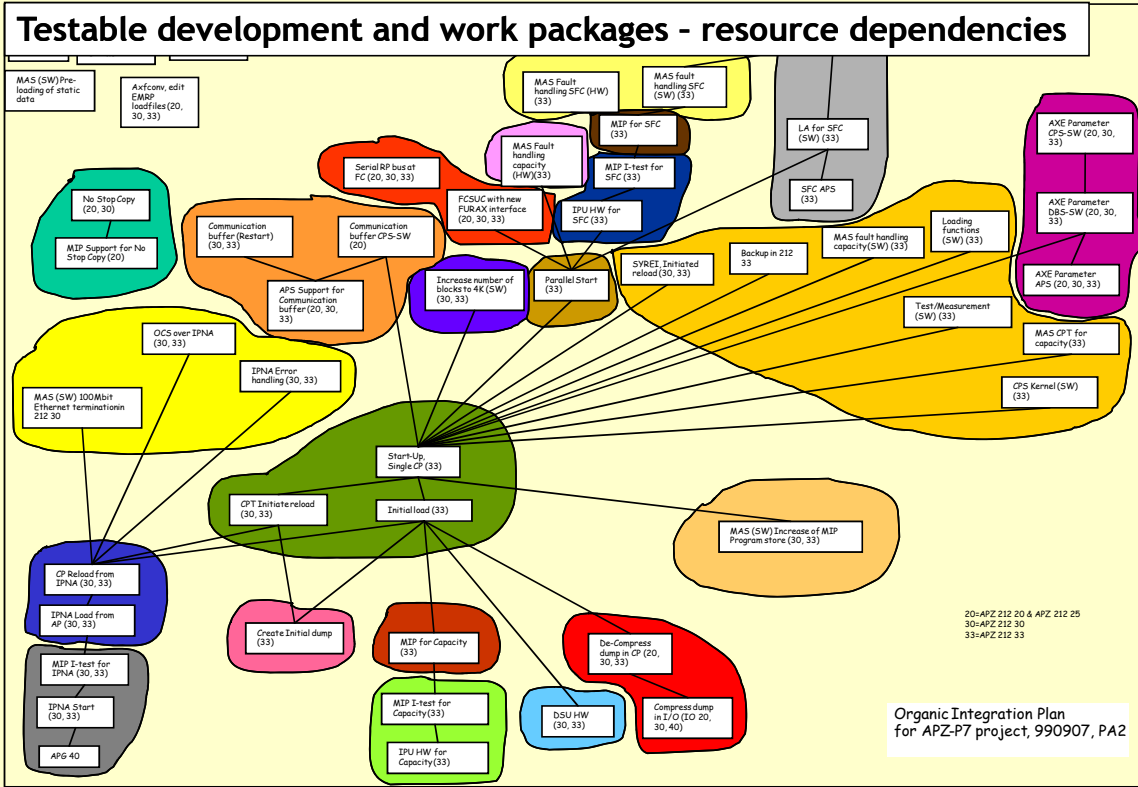


Alternative images

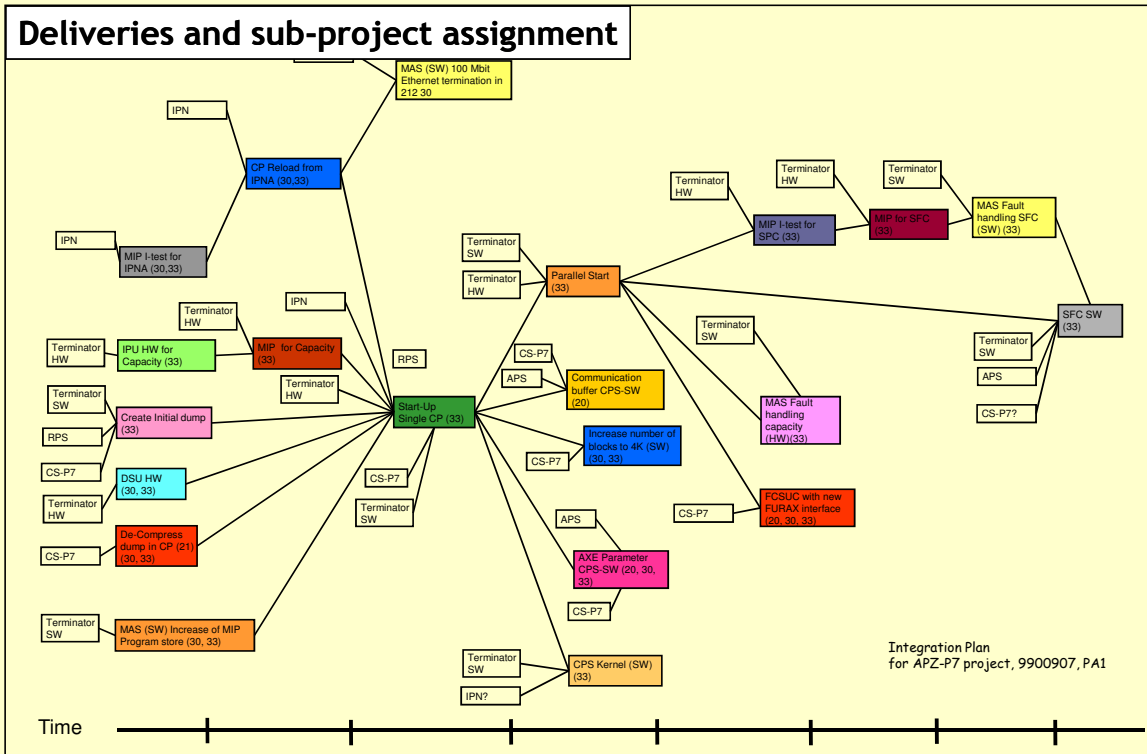
Anatomy



Organic Integration Plan

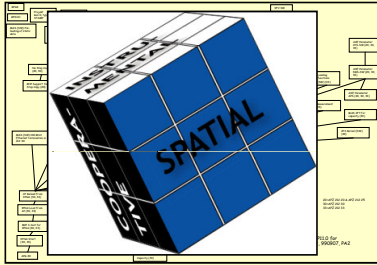


Integration Plan

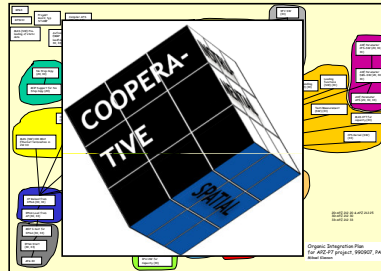


Images in Integration Centric Development

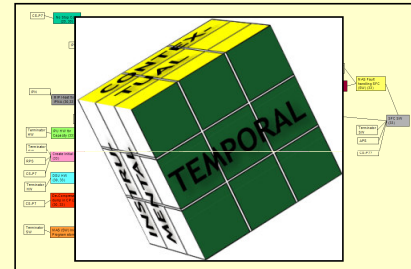
Anatomy



Organic Integration plan



Integration plan



Comparison

Traditional images

- Several dimensions in one image
- Disregard dimension interdependencies
- “Book-keeping” character
- Focus - Activity dependencies
- Hard to understand in complex projects
- Hard to maintain in complex projects

Alternative images

- One dimension per image
- Enhance dimension interdependencies
- “Action” character
- Focus - Capability dependencies
- Common understanding an objective
- “Easy” to maintain in complex projects

Conclusion

Alternative images are well aligned with the Activity Modalities (resource dimensions)

Activity Modalities reflect the structure of the human cognition (this is the way we experience the world)

The fit between alternative images and Activity Modalities may be one reason why these images are powerful instruments for managing complex projects