

The System Architect; Meddler or Hero?

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Abstract

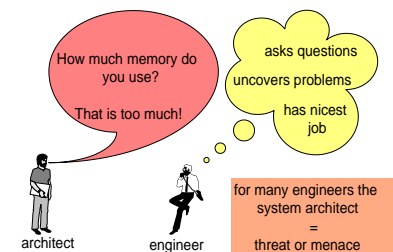
Describes architecting and the task of the architect, with emphasis on bridging the **why**, **what** and **how** of a product. The memory usage of a medical workstation is used as practical illustration.

The introduction of a system architect in an architecture unaware organisation is described. A metamorphosis takes place from a threatening meddler into an appreciated indispensable team member.

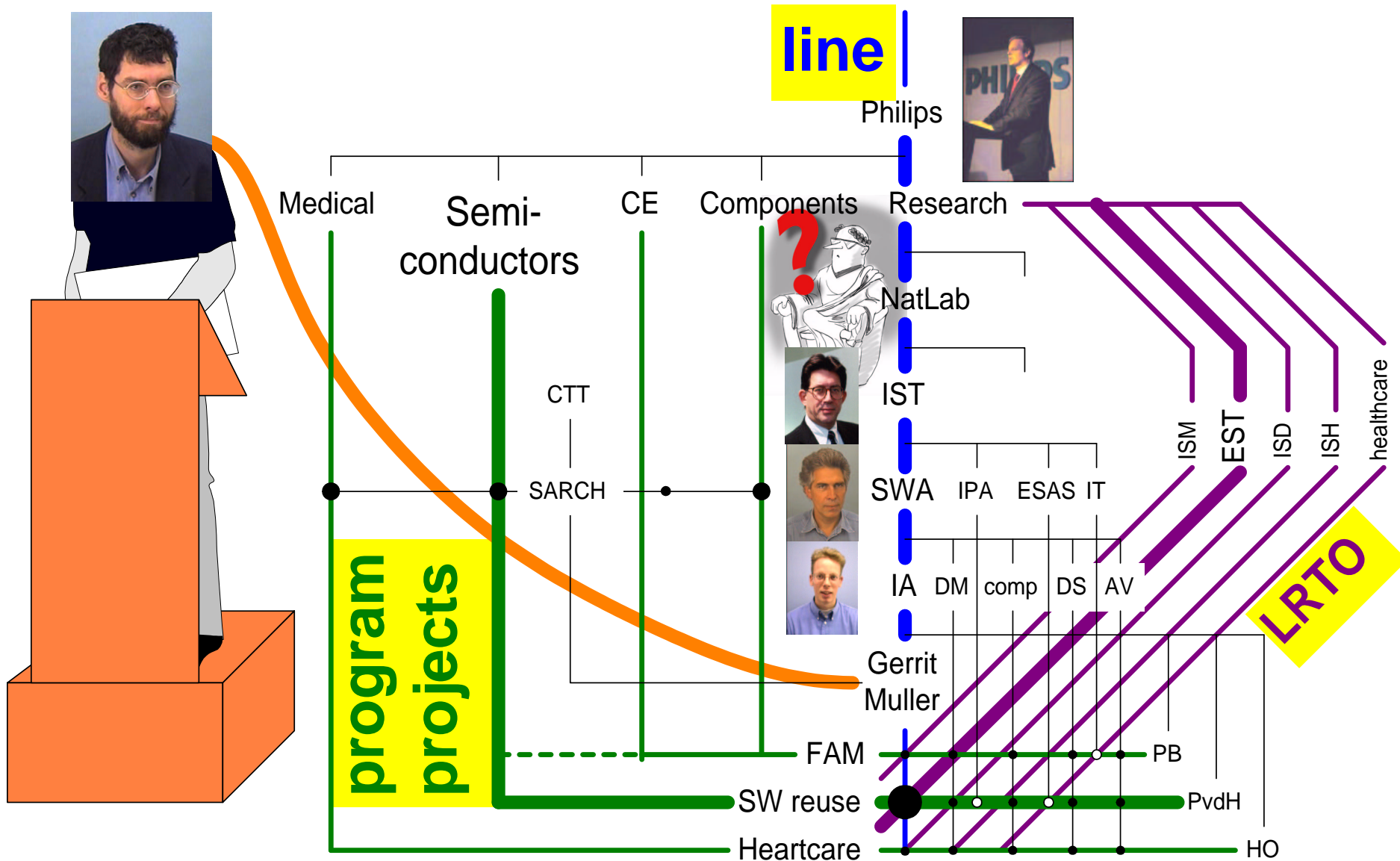
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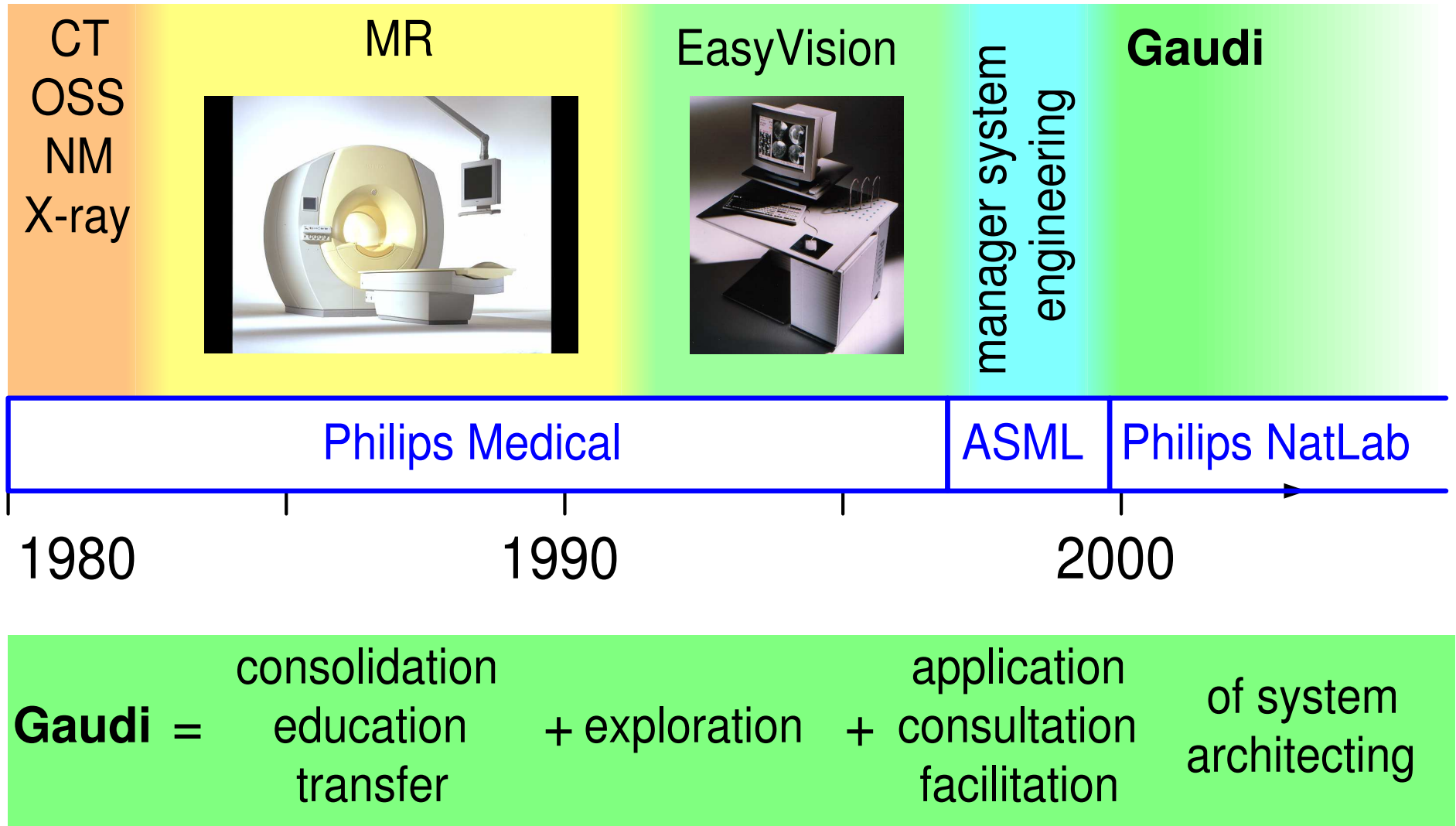
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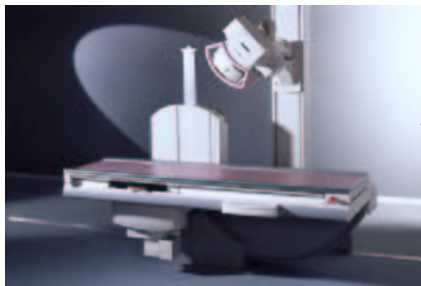
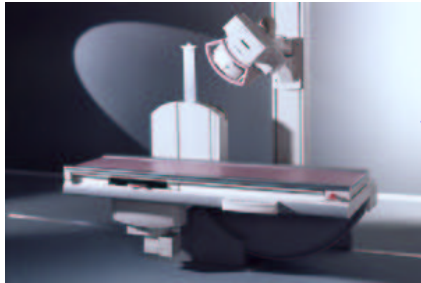
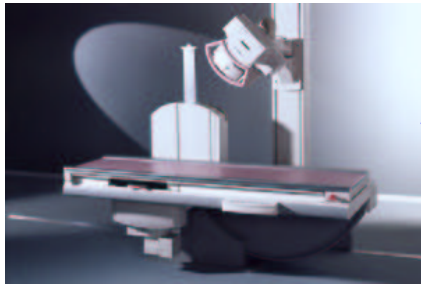
Where is Gerrit in multi-D organisation space?



Who is Gerrit? What is Gaudí ?



Practical illustration; a medical imaging workstation



URF-systems

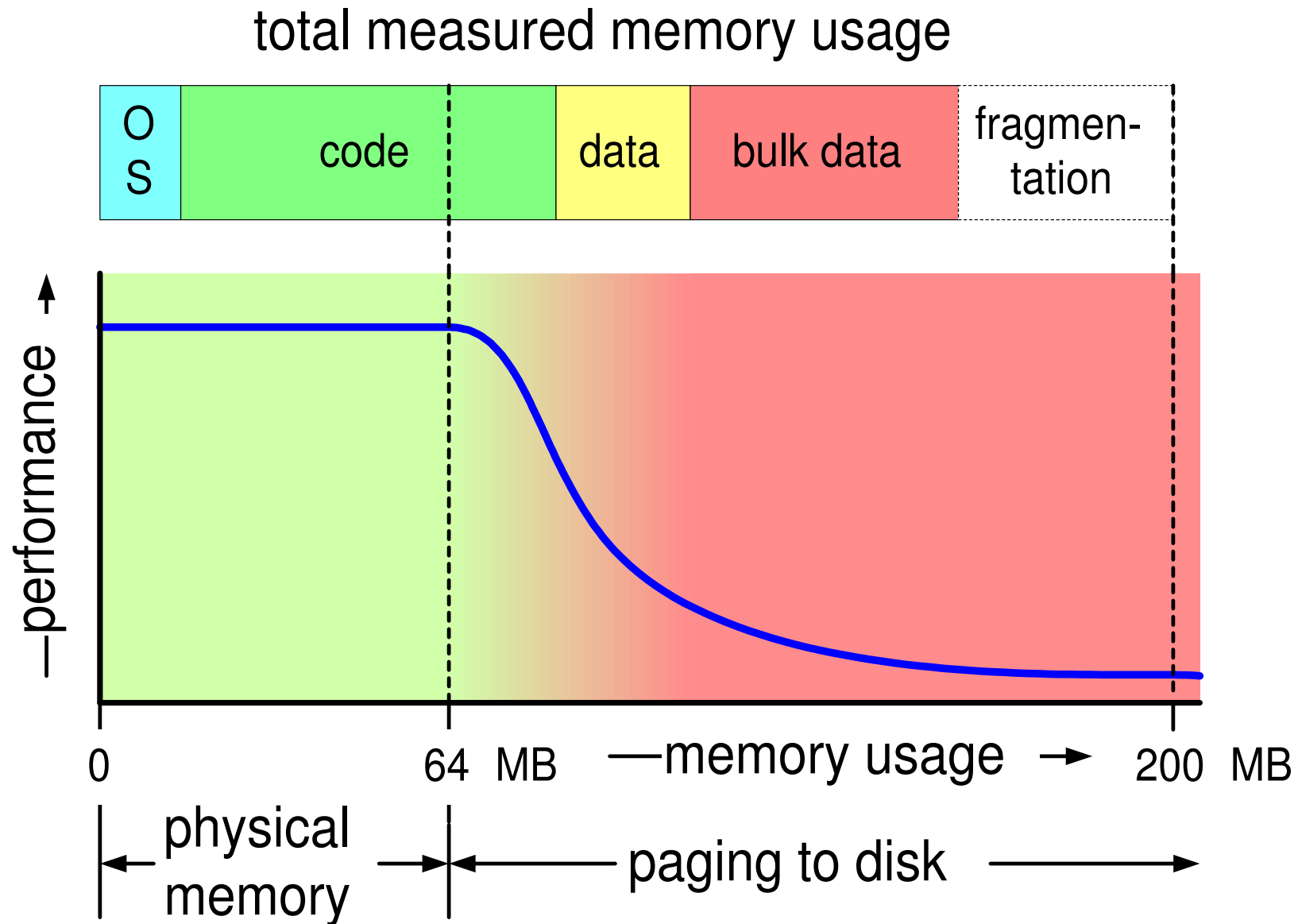


EasyVision: Medical Imaging Workstation

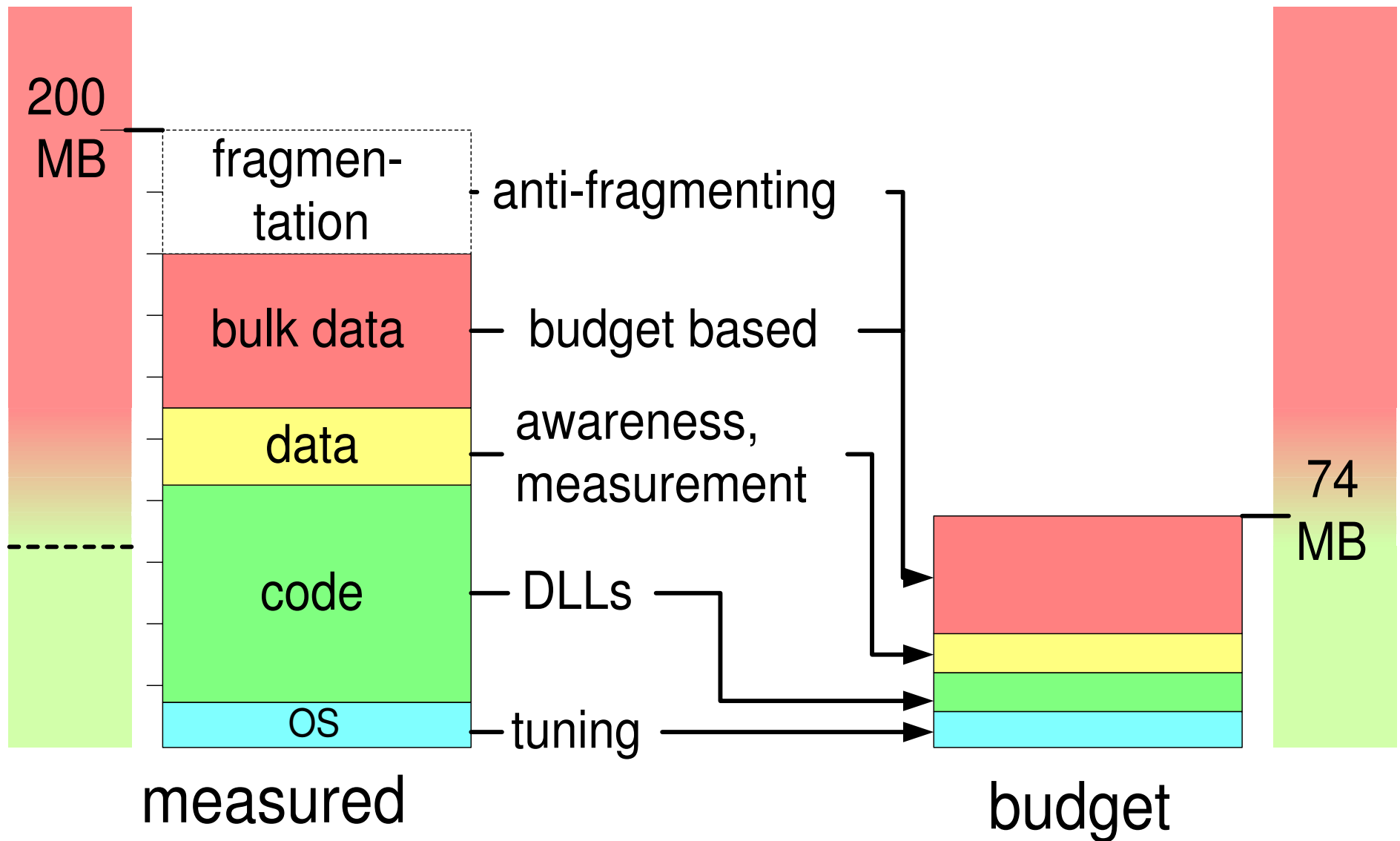


typical clinical image (intestines)

Problem: unlimited memory consumption (1992)



Solution: measure and iterative redesign



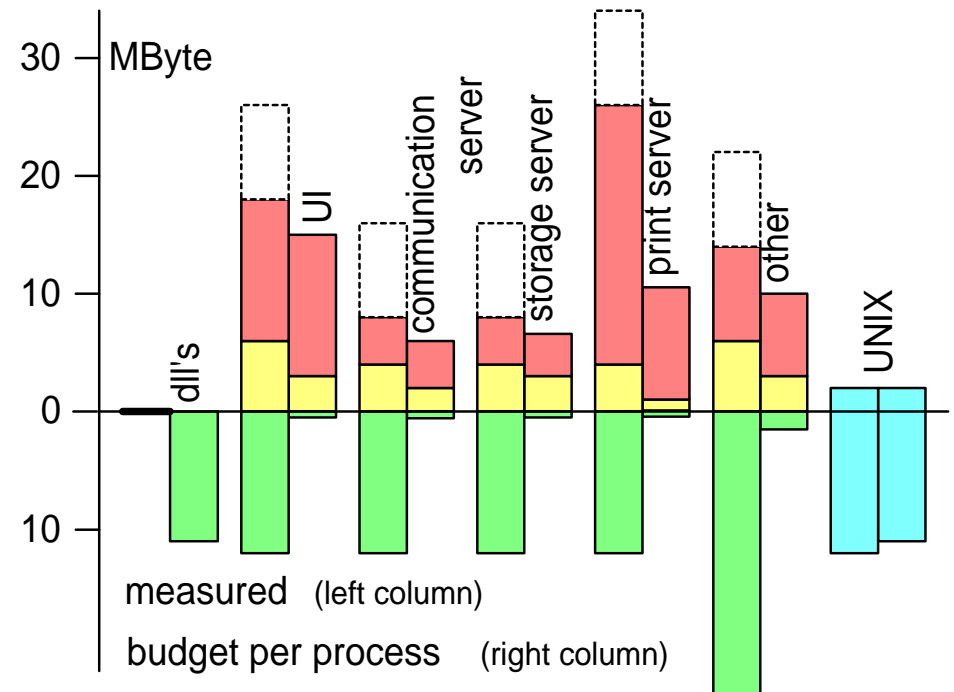
Method: budget per process

Budget:

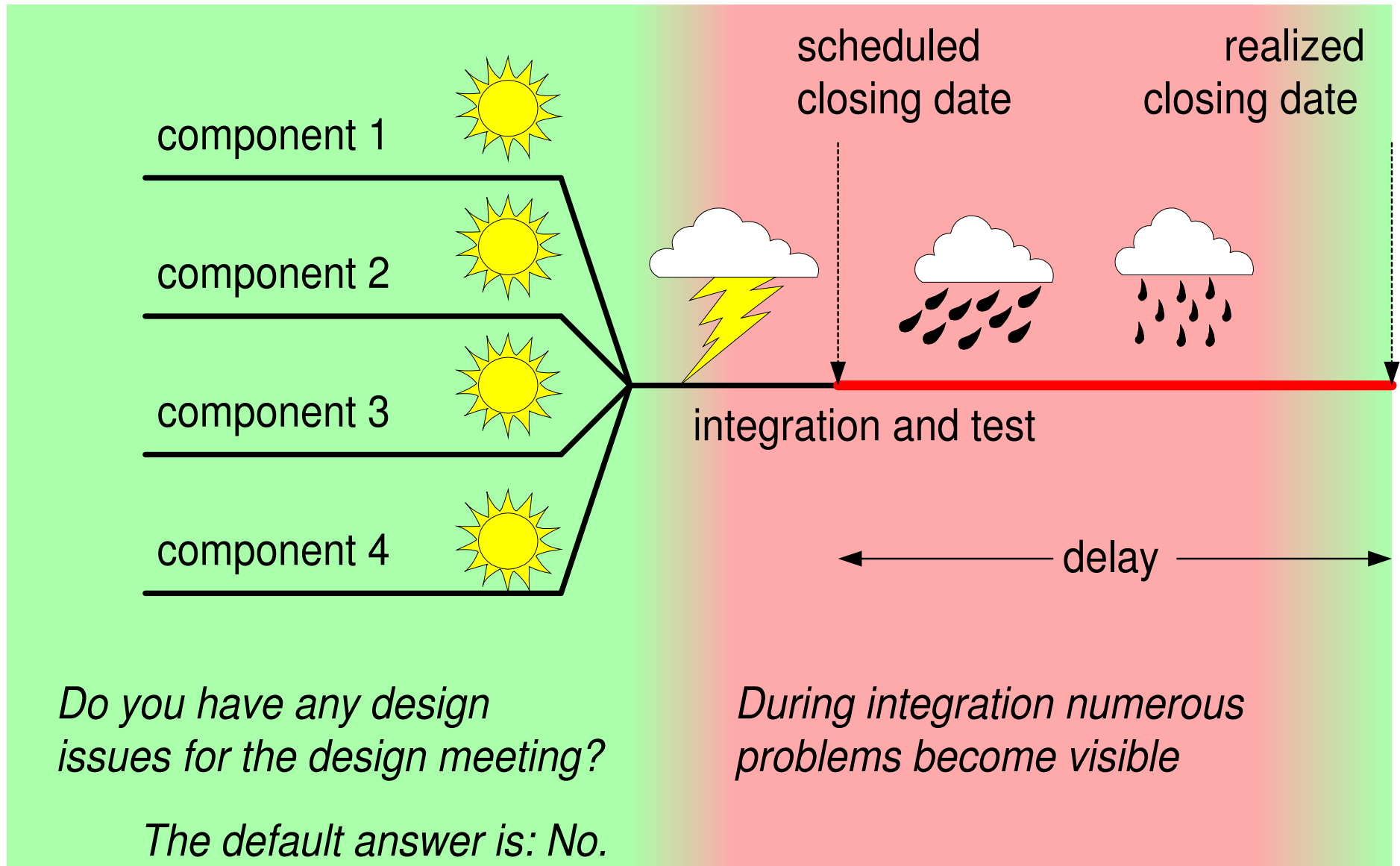
+ measurable

+ fine enough to provide direction

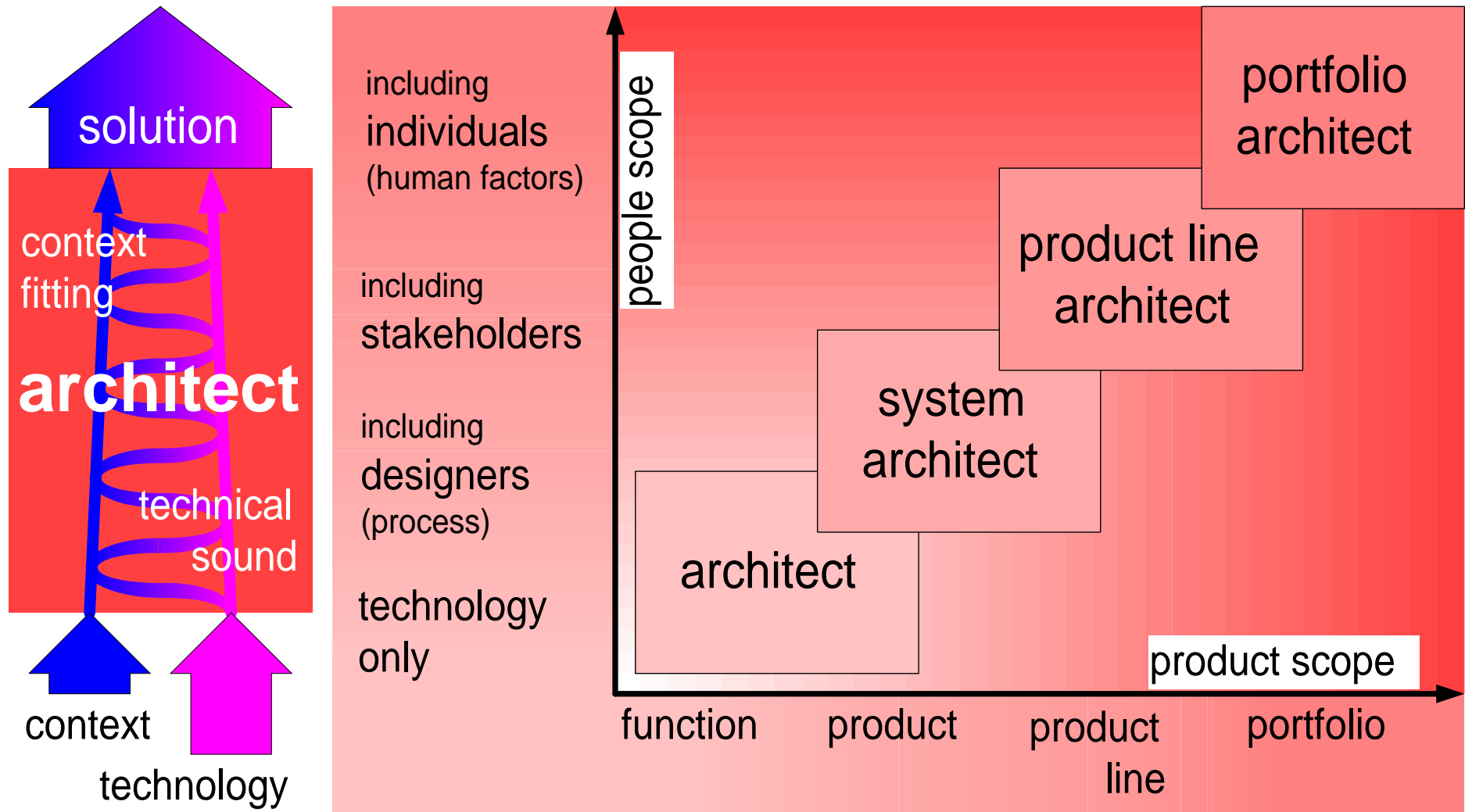
+ coarse enough to be maintainable



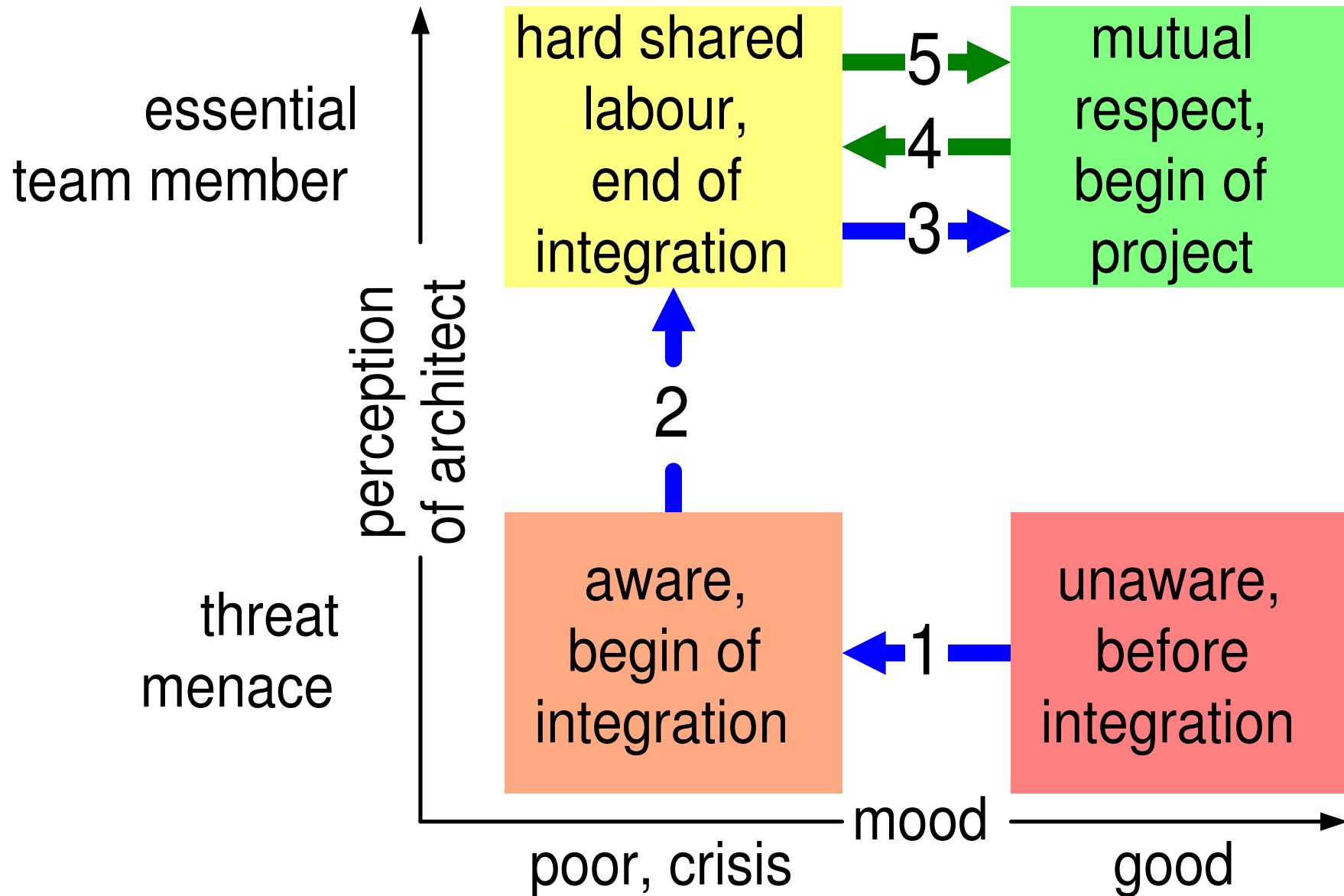
Integration uncovers hidden problems



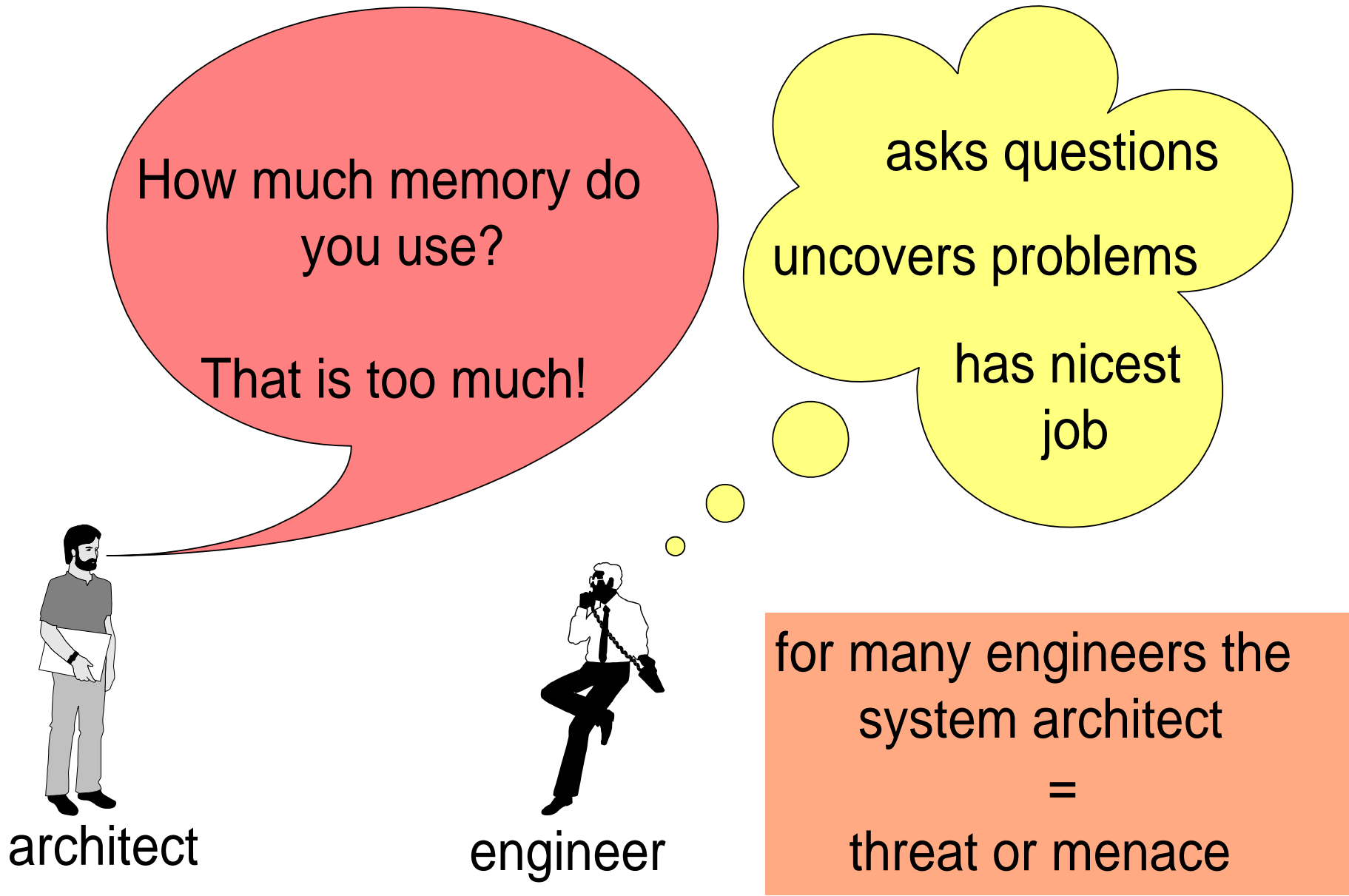
Architecting scope



Architecture awareness

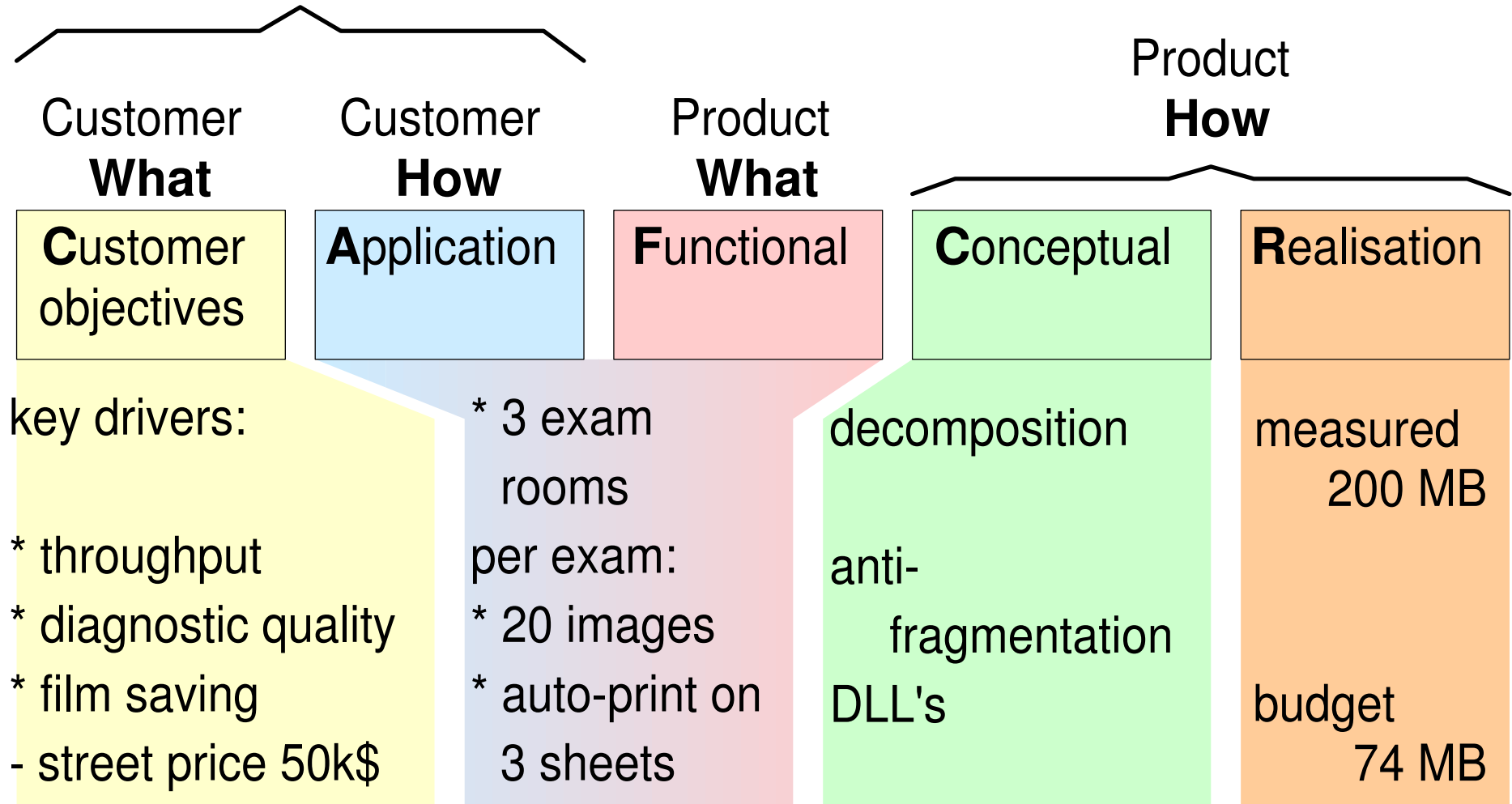


The engineer's perception of the architect



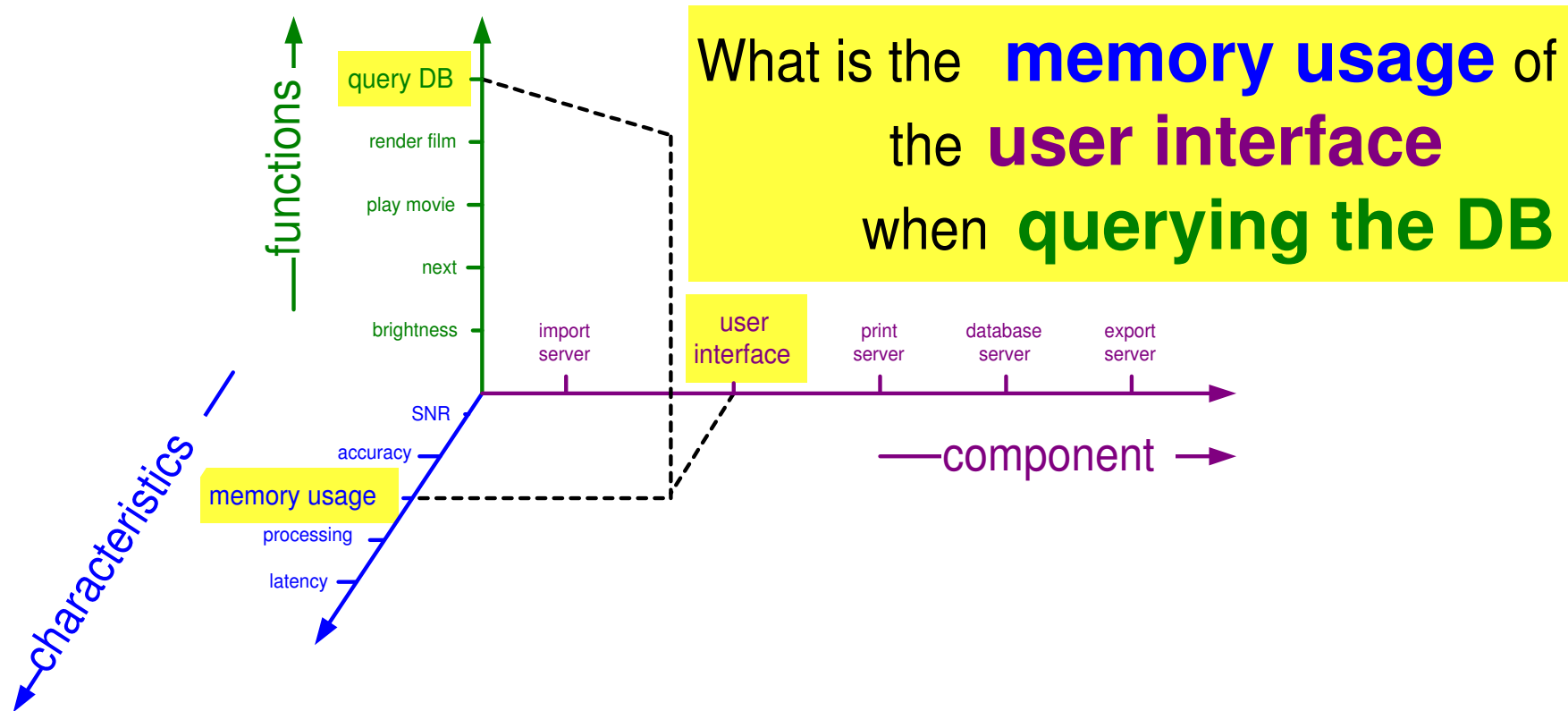
Understand the customer to drive design choices

What does Customer need
in Product and **Why?**

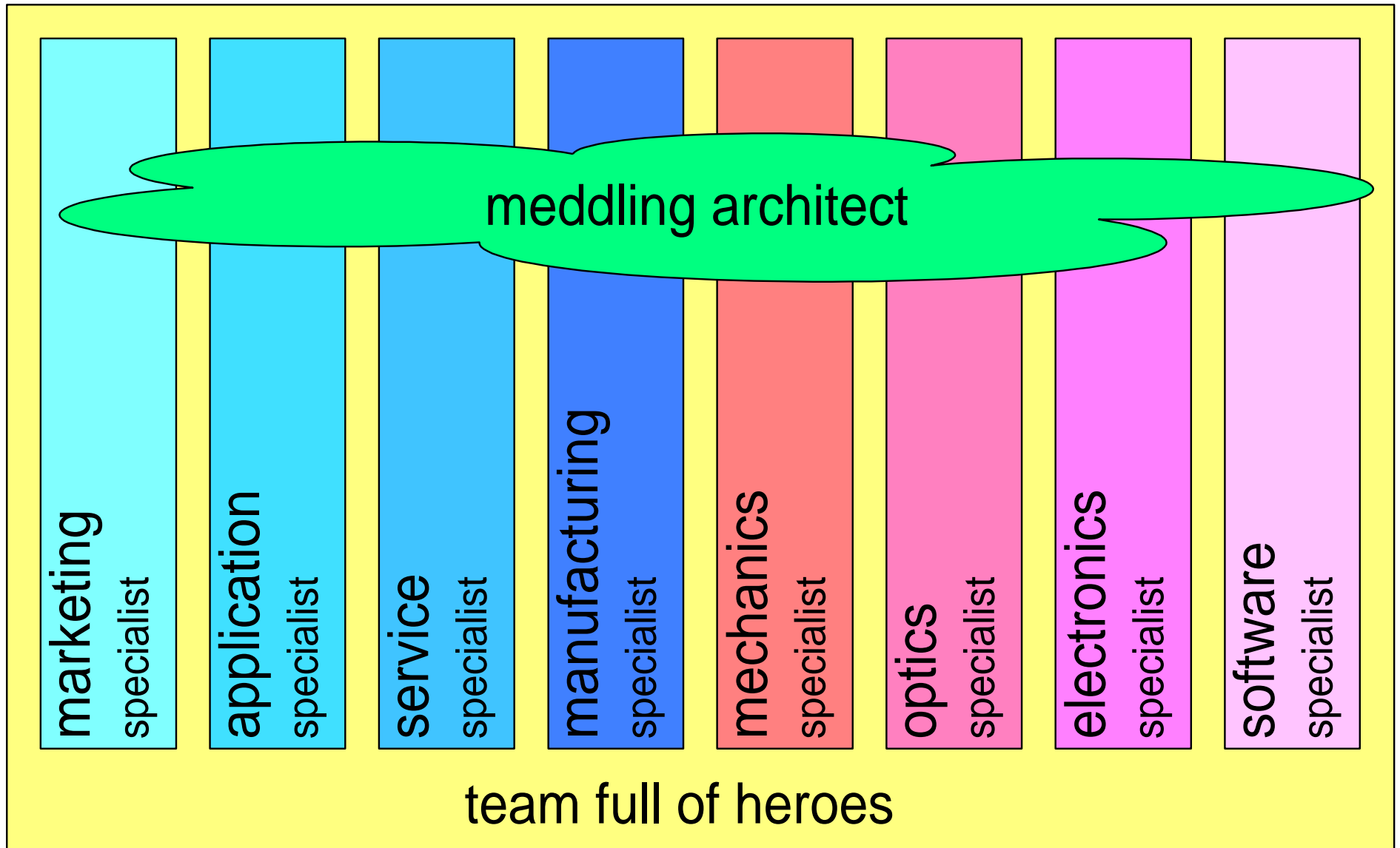


Method to detect problems: Question generator

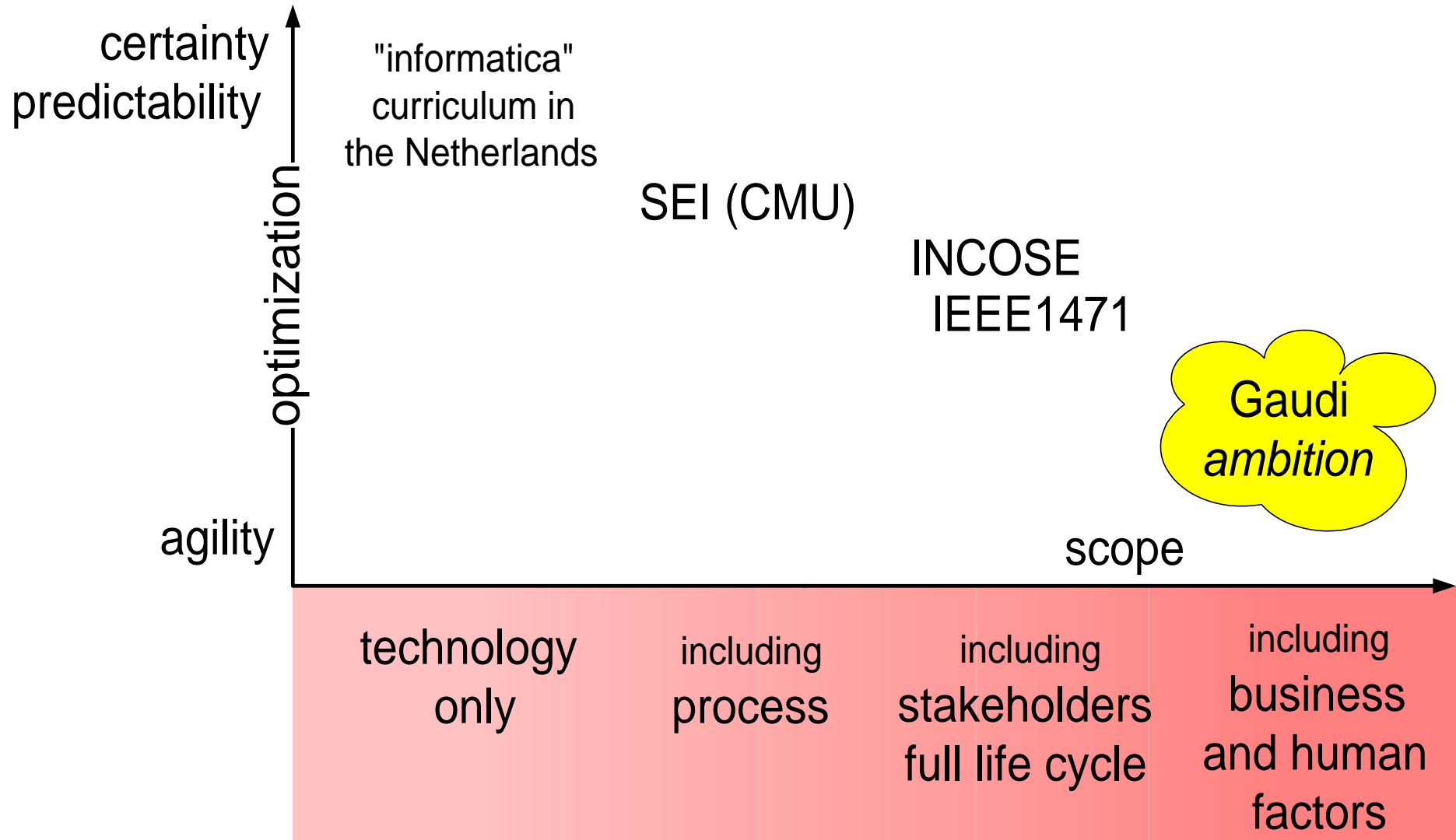
How about the **<characteristic>**
of the **<component>**
when performing **<function>**?



Conclusion



Benchmarking



Some Acknowledgements

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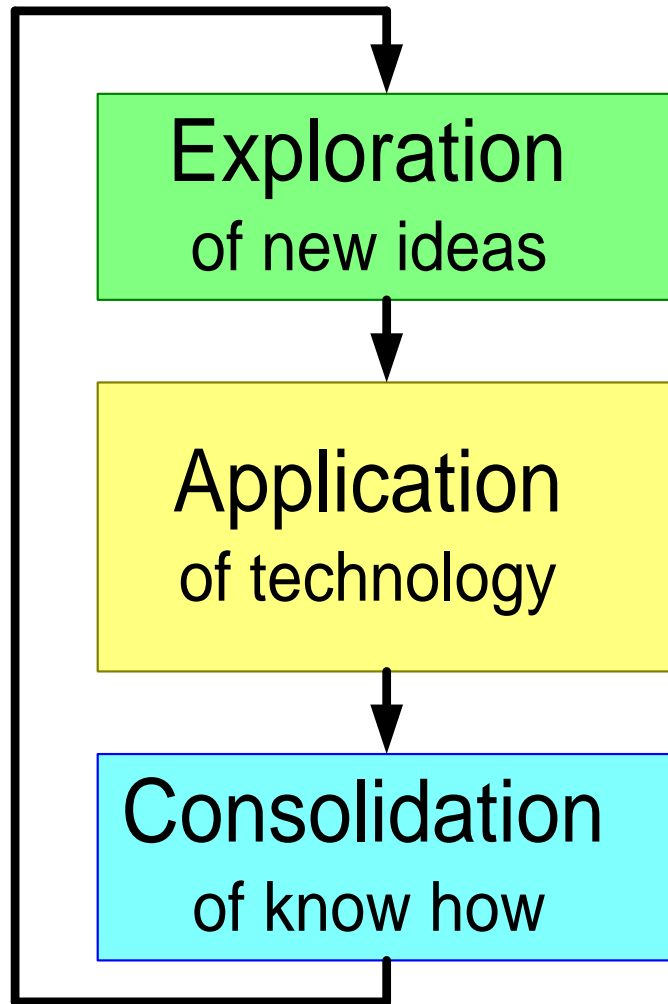
background information Medical Imaging

[MedicalImagingPaper.pdf](#)

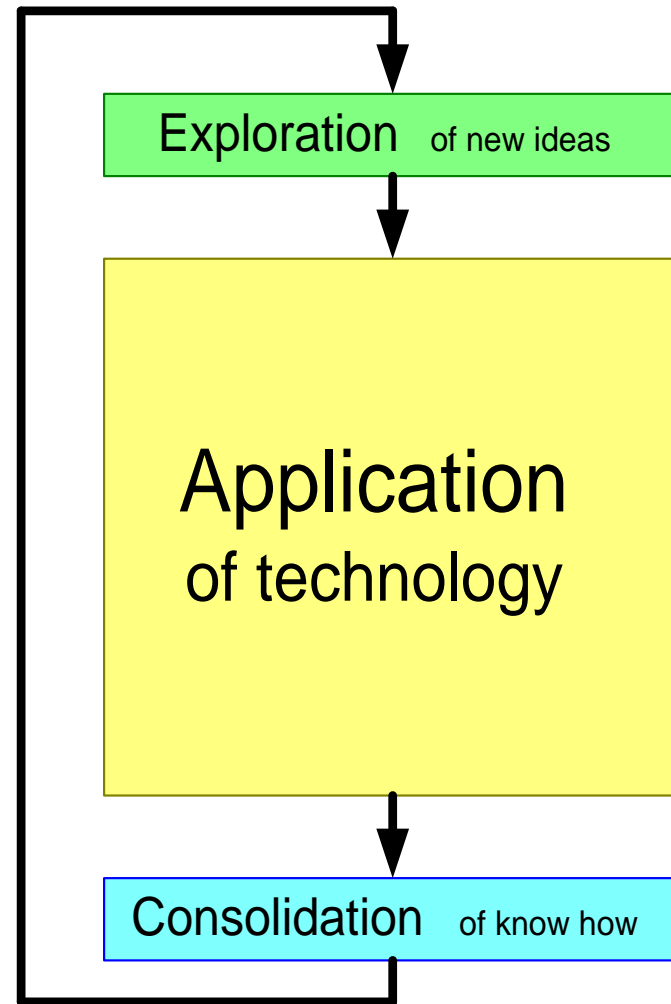
original documentation Medical Imaging

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Answers to frequently asked questions

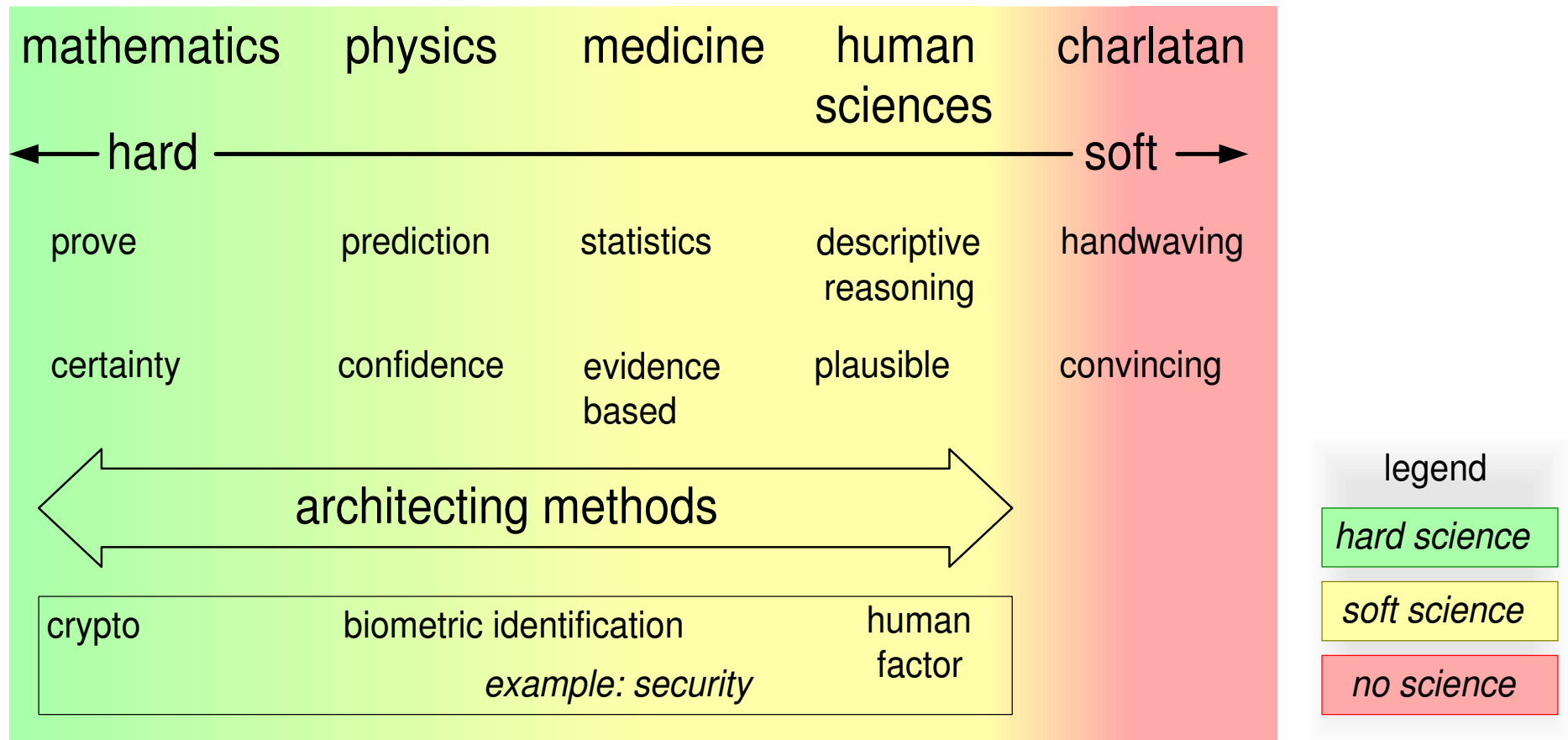


Research

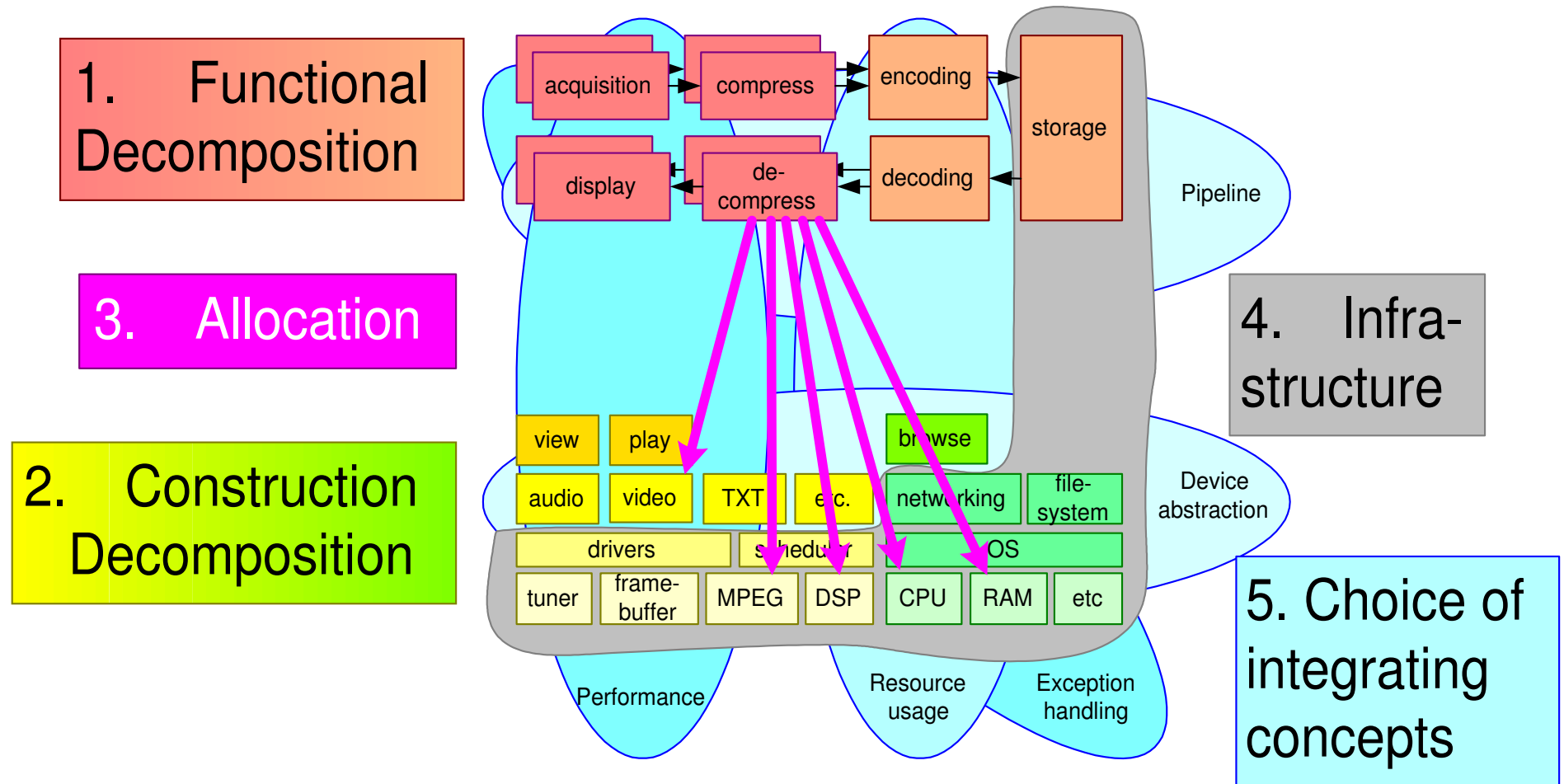


Product Division

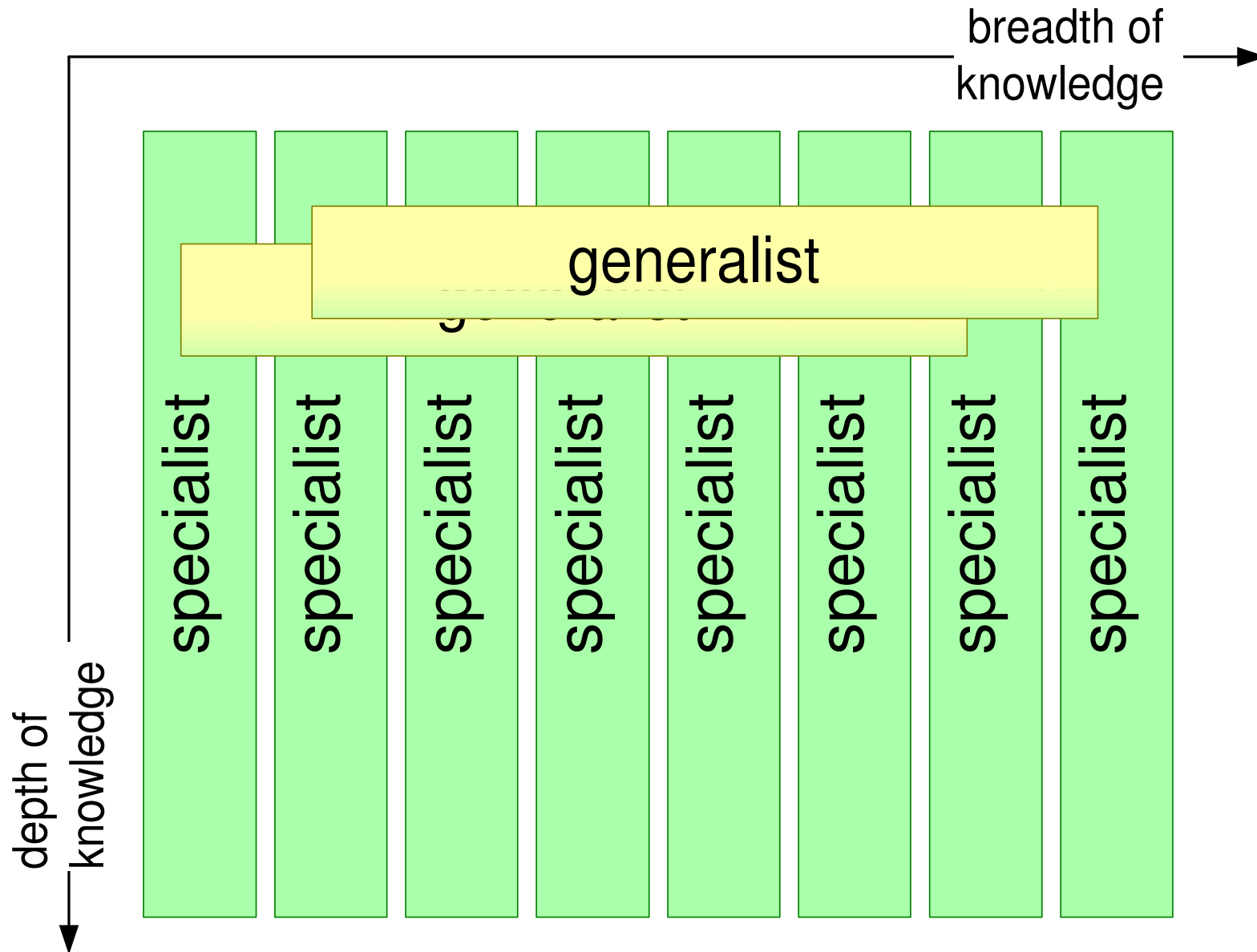
Is architecting scientific?



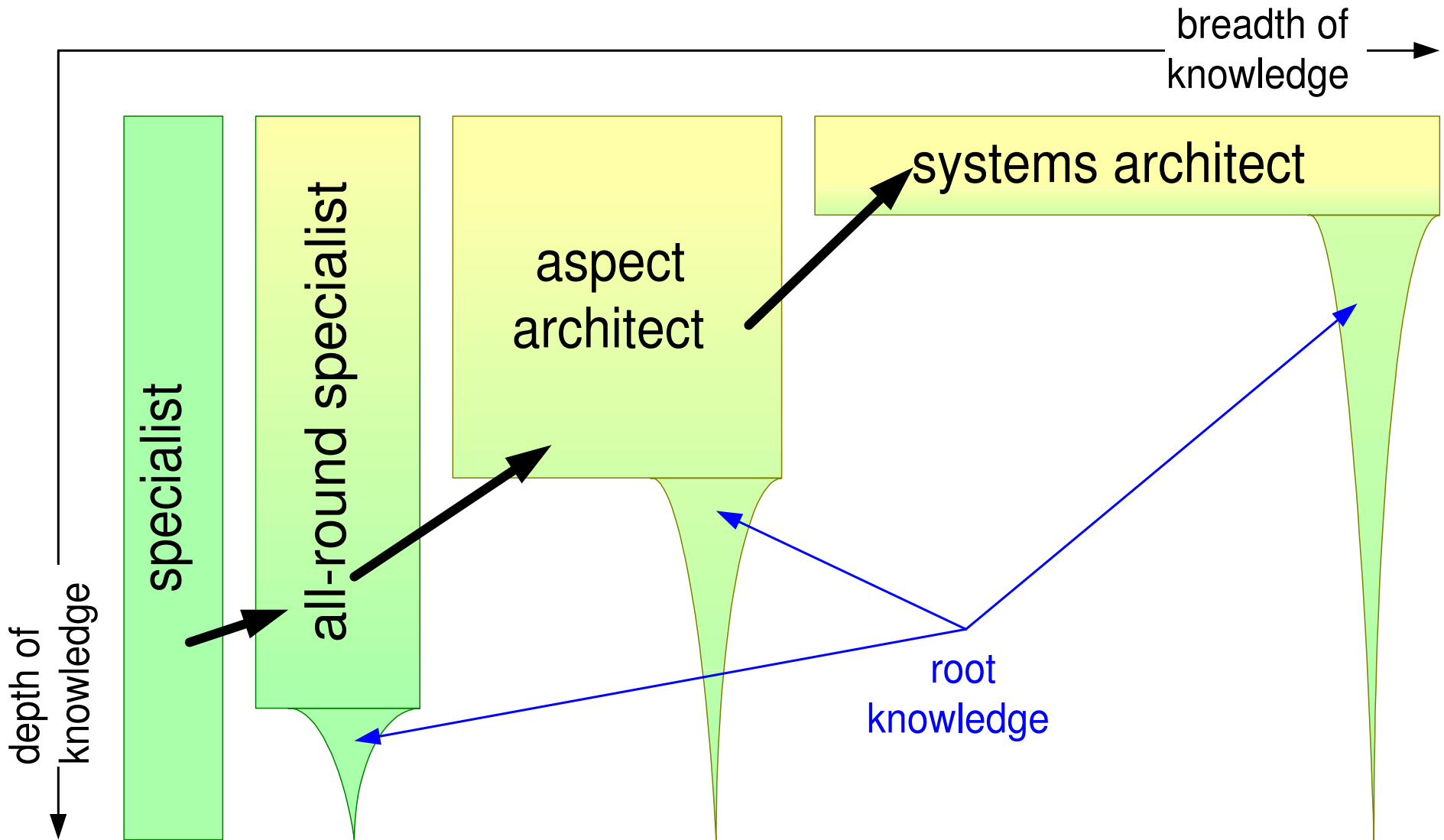
Guiding how



The architect as integrator

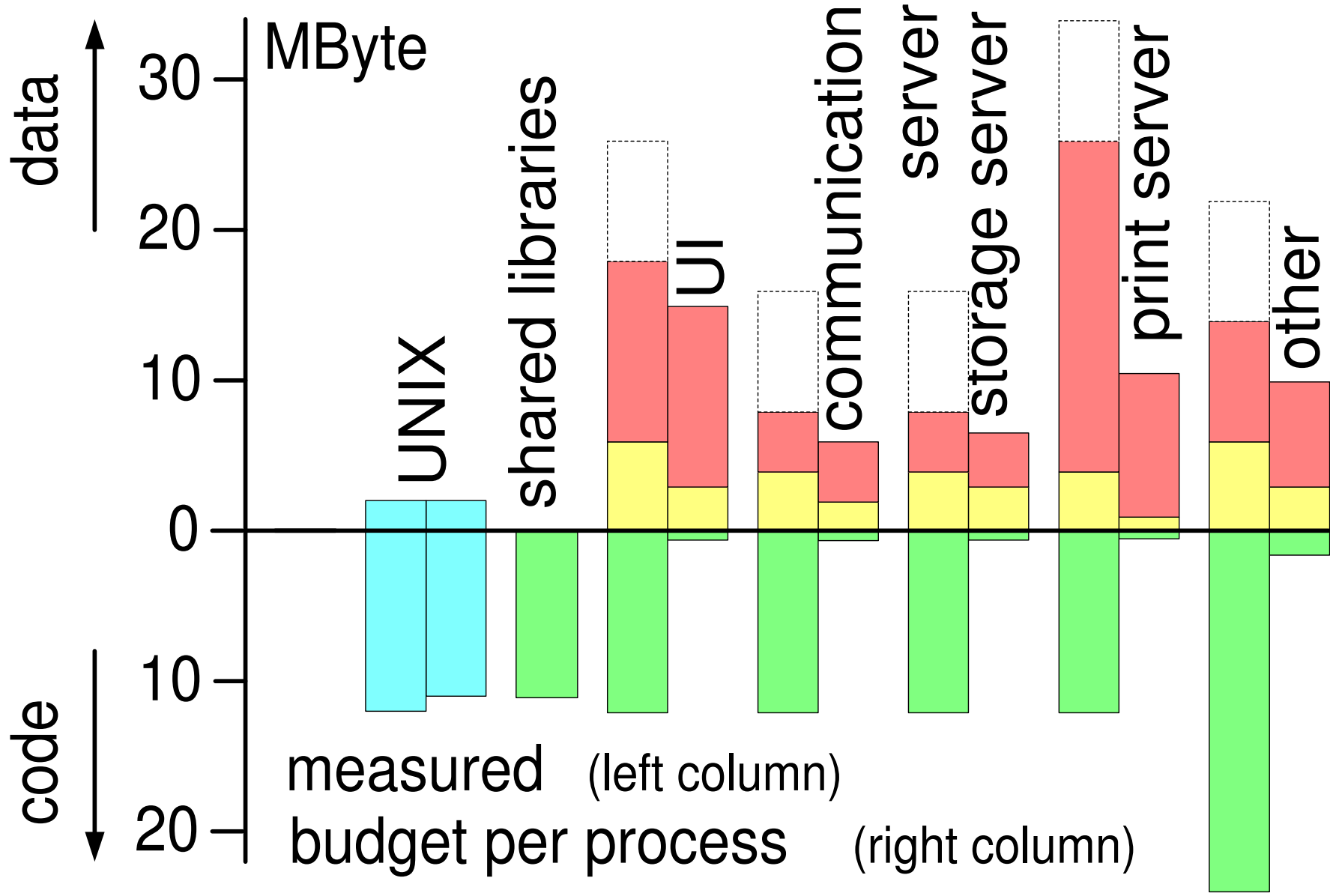


The architect maintains technical roots



sheets that didn't make it into the final presentation

Memory Budget; too detailed

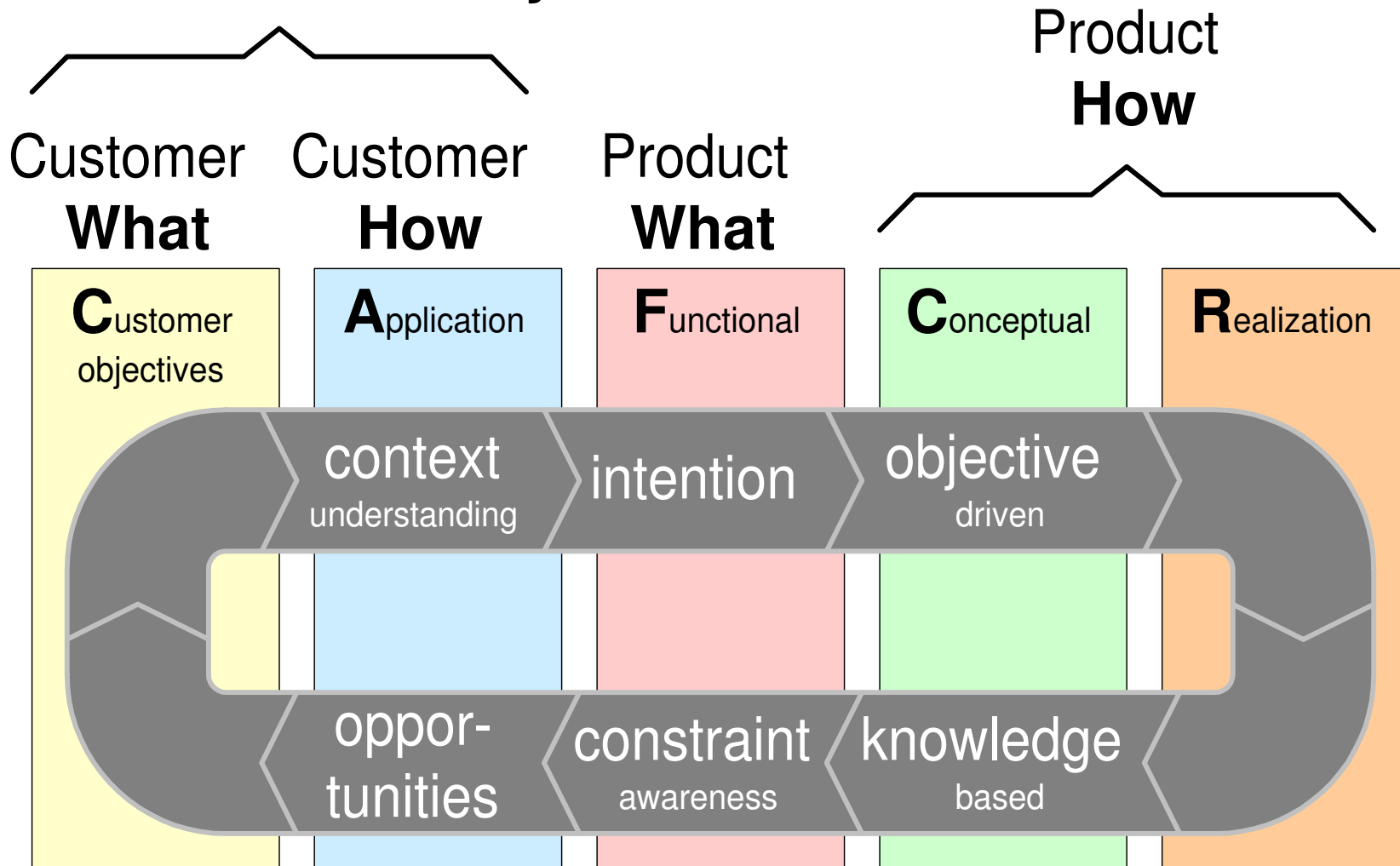


Engineers perception; too detailed, too much text

Engineers feeling	caused by	architect's activity	illustrated by	examples of architect behavior
Which can be nasty, if you don't have any answer		- Asks questions		How much memory do you use ?
Or worse, a problem is hiding underneath		- Identifies risks and problems		Your functions together use more memory than provided
A judgement is given		- Voices opinions		That is too much
Meddling in my backyard, without any substantial know how		- Does have holes in know how		Takes decisions without knowing how memory intensive a hashed dictionary is
While we are busy with detailed bug fixing and maintenance		- Does the nice work		Makes a toplevel design, for instance a memory budget
Every question or problem explodes into an even more extensive set of questions and problems		- Does not provide definite answers or solutions		What happens if we have many small images? Or if we have very large images?

Integrating CAFCR; too glossy

What does Customer need
in Product and **Why?**



Architect characteristics; too detailed, too much text

Engineers perception

- Asks questions
- Identifies risks and problems
- Voices opinions
- Does have **holes** in know how
- Does the nice work
- Does not provide definite answers or solutions

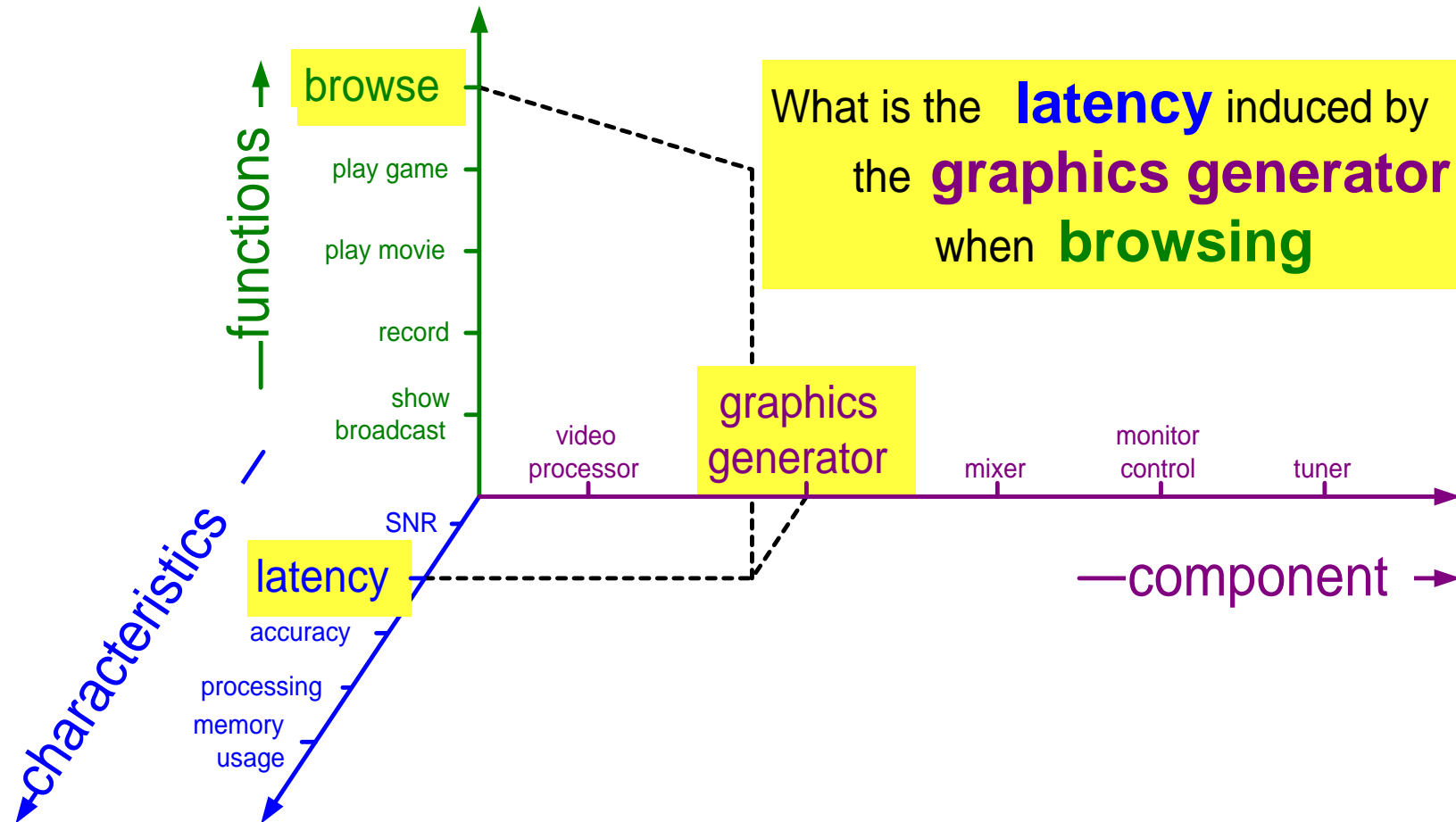
Required characteristic of the architect

Questions are the primary tool of an architect

- + Prevention is valuable
- + Focus, selection is key, which requires vision and choices
- + Sometimes the architect needs to dive in deep
- + There is more nice work needed than we ever can do
- + Keeps repeating the previous actions

Question generator; other domain

How about the **<characteristic>**
of the **<component>**
when performing **<function>**?



Architecture Awareness Phases; too complex

