Disruptive Technologies, Open Source, and Mobile

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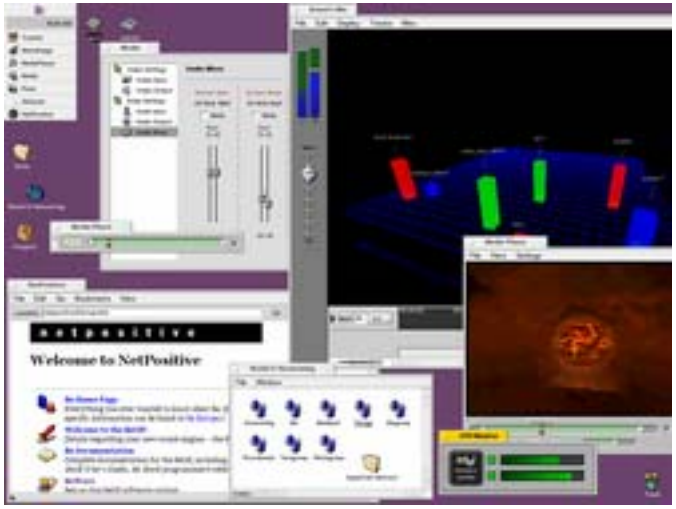
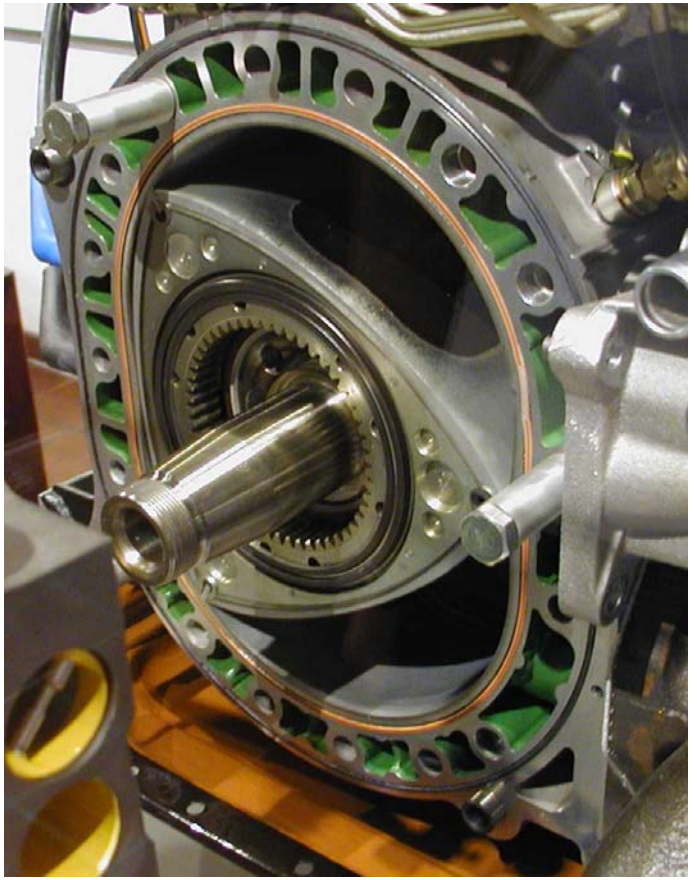
www.espen.com 2004

Why doesn't the best technology win?





Betamax

NeXT

How does technology evolution work, anyway?

Innovation And Technology Evolution Is Anything but Simple

- Technology evolution is a process of evolution and revolution, with many competing designs in the period immediately after the revolution. A dominant design eventually surfaces, always lagging the technology frontier (Abernathy & Utterback; Utterback & Suarez). When the dominating design is established, the nature of competition changes from innovation to performance.

- The dominant company in one technology generation will resist moving to the new generation (Foster; Christensen) through pursuing innovation and productivity increases in its current technology (Utterback)

- The process is multi-leveled: A smooth aggregate growth in capacity may mask revolutions at component level (Iansiti and Khanna). These revolutions may be competence-destroying or competence-enhancing

What is a disruptive technology, anyway?

Christensen, Clayton M. (1997). *The Innovator's Dilemma: Why New Technologies Cause Great Firms to Fail*. Boston: Harvard Business School Press.

- Your best customers don't want it

and

- It gives poorer performance

and

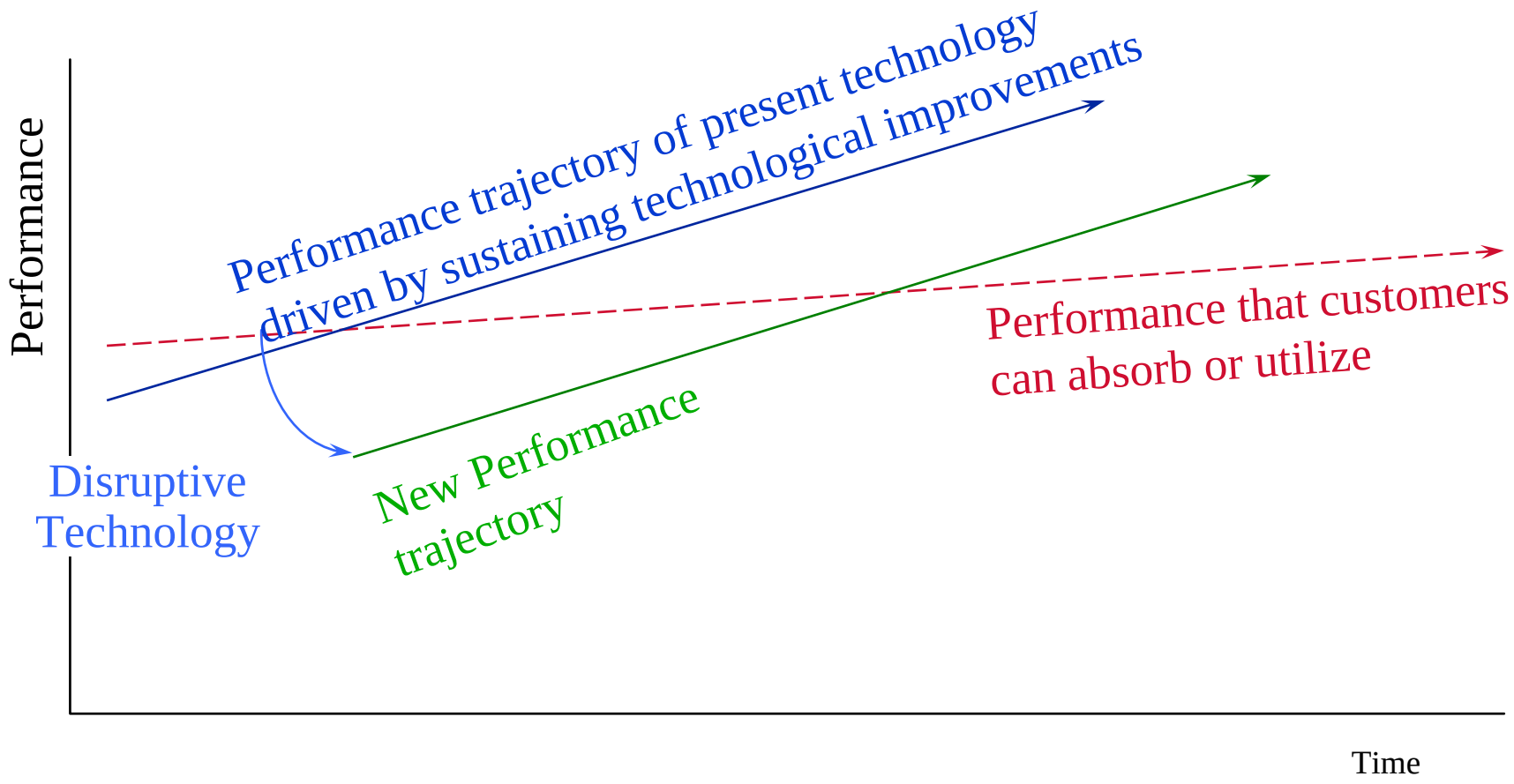
- If you did it, you would lose money

Core attribute: The incumbent leader is the least suited to adopt it

Disruptions hit you where you don't care

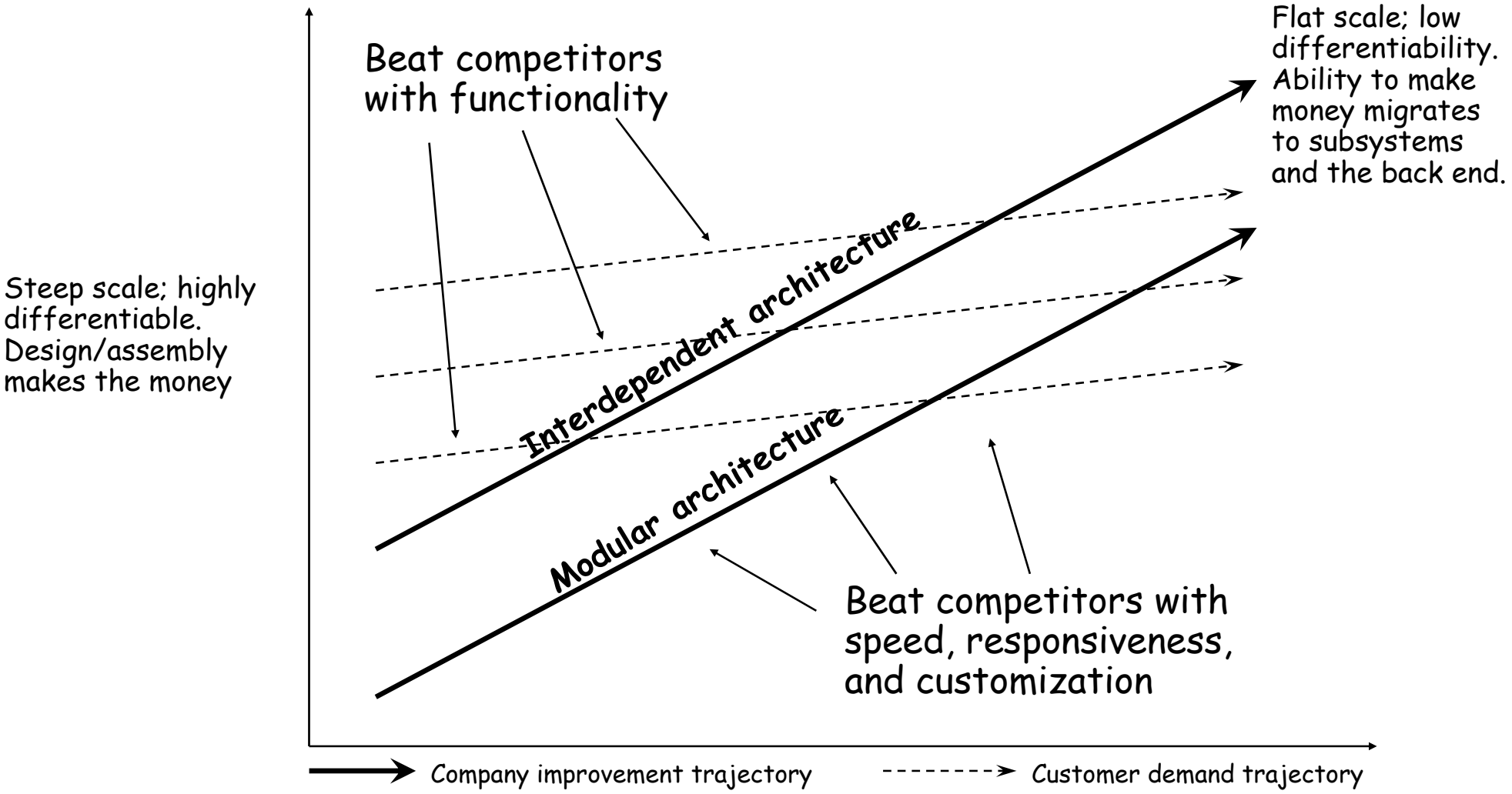
Quality overshoot

Christensen, Clayton M. (1997). *The Innovator's Dilemma: Why New Technologies Cause Great Firms to Fail.* Boston: Harvard Business School Press.



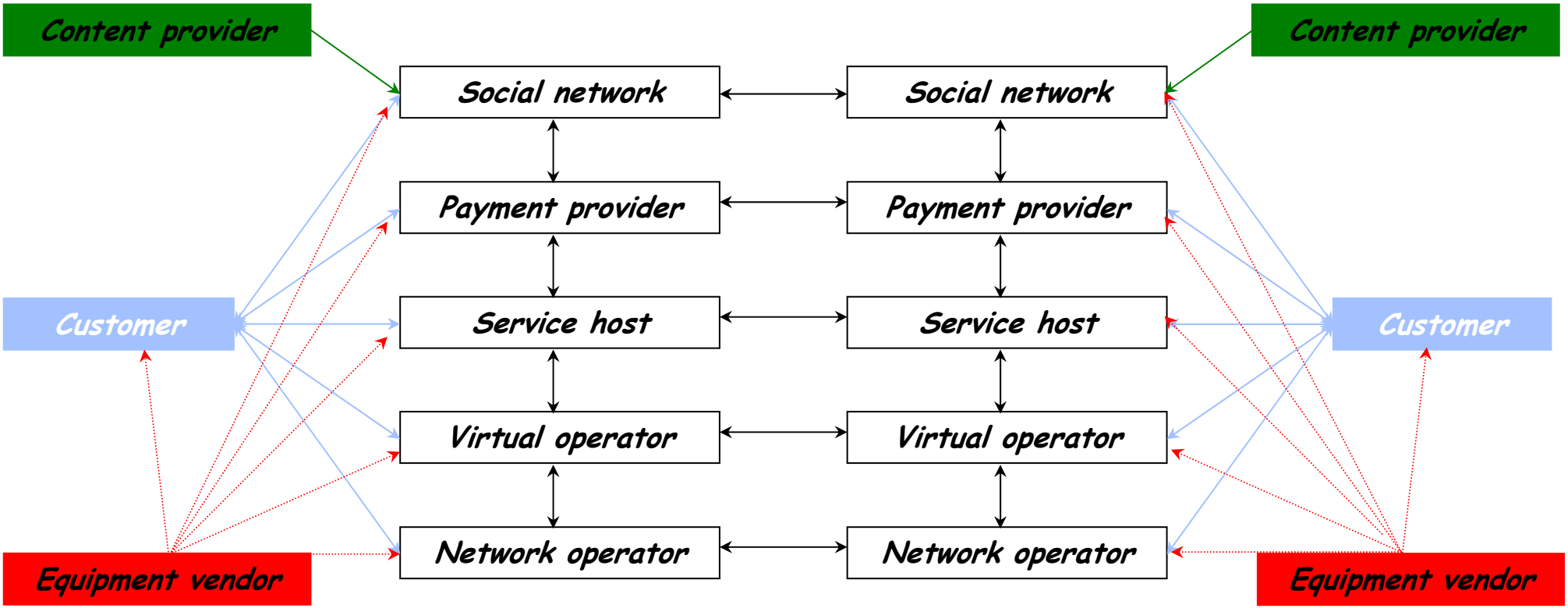
Value Chain Evolution Theory

Christensen, Clayton M. et al (2004). *Seeing What's Next: Using the theories of innovation to predict industry change*. Boston: Harvard Business School Press.



The mobile information services market has services linked horizontally and vertically

Adapted from: Andersen, E. and Ø. Fjeldstad (2003). "Understanding inter-firm relations in mediation industries with special reference to the Nordic Mobile Communication Industry." *Industrial Marketing Management* 32: 397-408.



Each layer has a link to the customer – or at least would want to

Is this a phone or a platform?

The evolution of functionality?

- Problem
- Product
- Platform
- Protocol

Some propositions

- Open source means little in telecommunications, except for the provision of building blocks for new services
- Everything needs a business model in the end
- Open source requires identifiable customers
- The end user does not care about whether the service is open or not (except for DRM, and then largely about convenience)
- Software vendors are weapons manufacturers: They need to find unruly areas with many local warlords
  - Opera: OS → Handset maker → Operator

Specific functionality is what it is all about

- ***always on:*** **The device does not need to initiate the session.**
- ***location awareness:*** **The device knows where it is.**
- ***peer awareness:*** **The device knows where other, similar devices are.**
- ***information capture:*** **The device can capture information, such as bar codes.**
- ***authentication:*** **The device can securely identify its owner or user.**

Source: E. Andersen, *mB: Mobile business*, Concours Group 2001

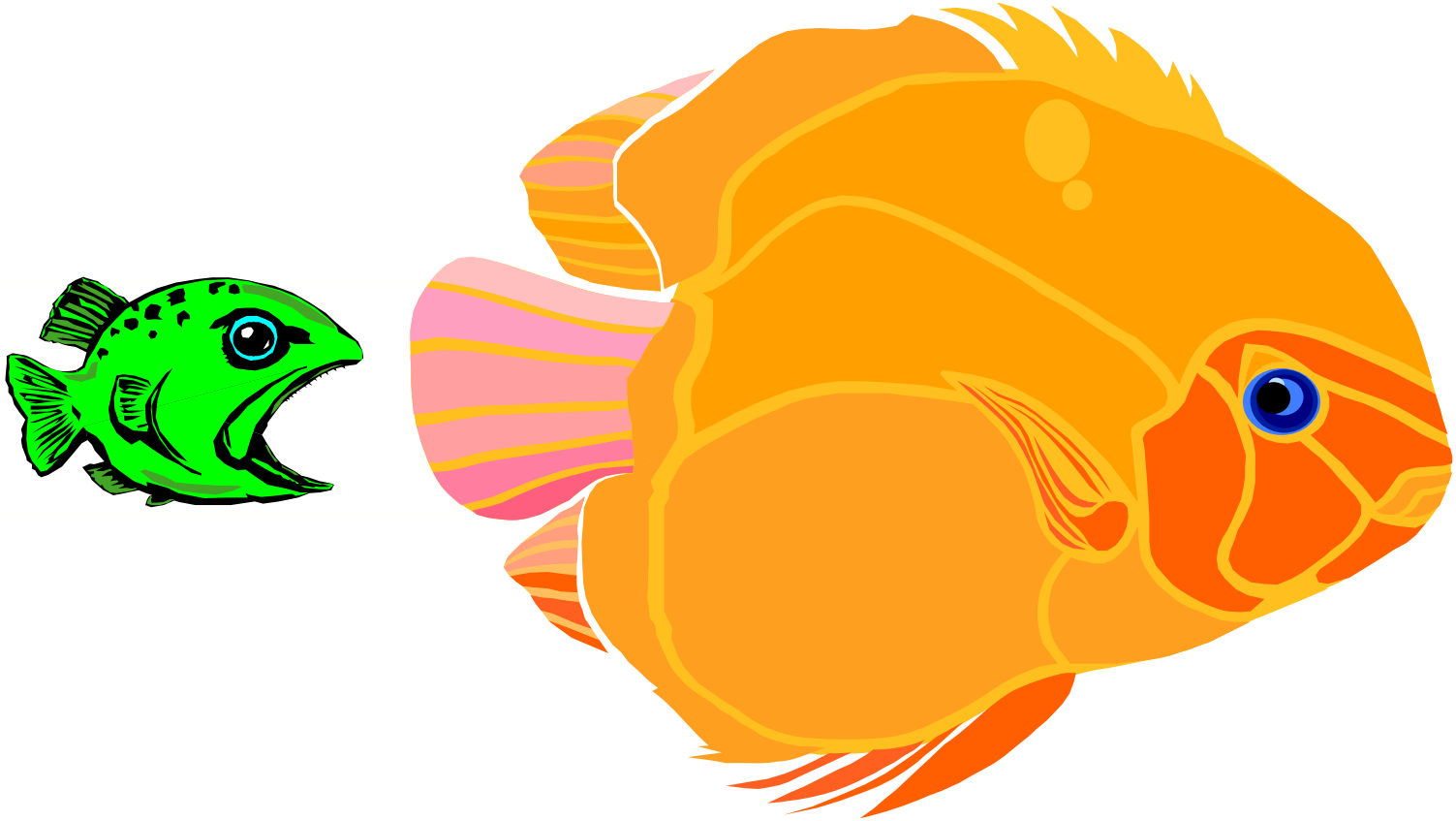
The personal architecture is where the competition will be played out

Source: E. Andersen, *mB: Mobile business*, Concours Group 2001

How do you make a technology disruptive?

- Figure out what its **unique** features are…
  - Good ones
  - Bad ones
- Find markets where the bad features are good features
- Find markets that are overserved by current technology
- Find markets that do not consume what is provided by the technology

How do you sell a slow car that can't go far and has no passenger space?



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