Self-* Technologies in Industry:
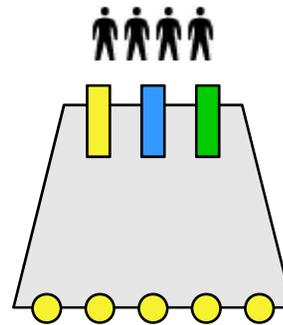# Niche Market Today, Mass Market Tomorrow?

Panel Presentation at the
*Workshop on Business Applications and Potential
of Self-Adaptive and Self-Organizing Systems
(SASO-biz)*

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What Characterizes a Niche Market?

few users

few functions

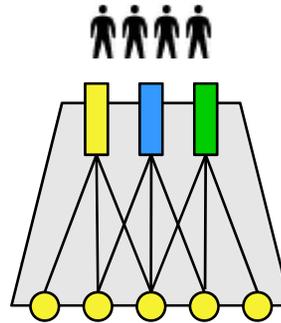limited infrastructure

limited access (info/ctrl)

What Characterizes Candidate Domains for Self-* Apps?

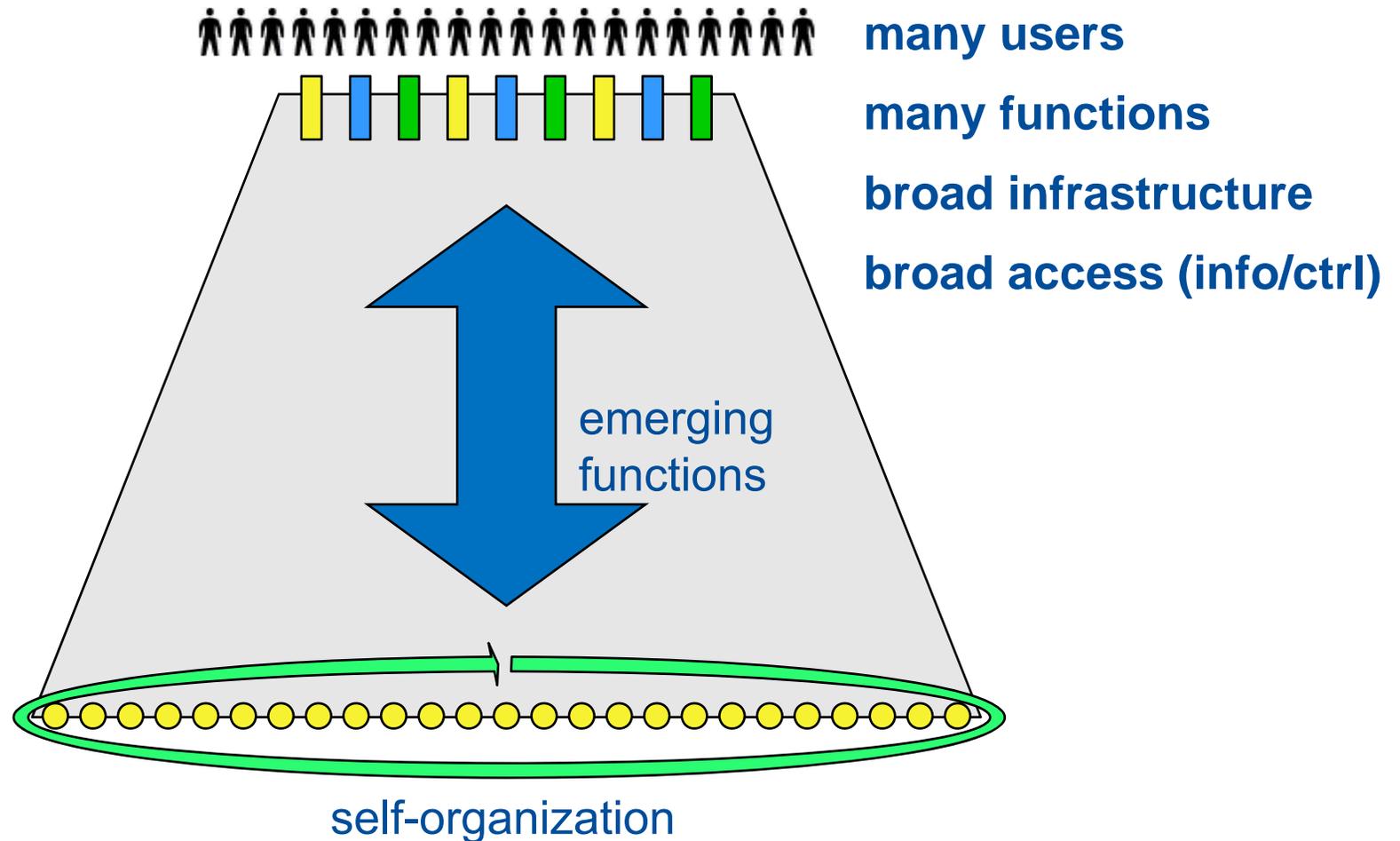| Problem Characteristic (D^5)	Motive	Niche Market?
Discrete	Needed for Agents (and some kinds of Organization)	Yes, they may – so agents should be good.
Deprived (resource constrained)	Rules out brute-force methods	Maybe. Depends on whether the resource constraints prevent centralized approaches.
Distributed	Defines topology within which Organization takes place	Maybe, but usually confined to single-host or very small scale distribution.
Decentralized	Avoids scaling problems	In some cases, maybe.
Dynamic ◆Scope ◆Speed ◆Obscurity	Rules out pre-designed organization	Yes.

Most conceivable functions could be provided by traditional approaches!

Selling Point: Strategic Scalability to Mass Market!

many users

many functions

broad infrastructure

broad access (info/ctrl)

emerging functions

self-organization

Conclusions

- **Providing few functions with limited scope to few users can usually be done with traditional approaches**
- **Selling points for self-organizing systems are usually their scalability and adaptability**
- **Niche market self-organizing applications are only sellable if**
  a. **Massive scaling is anticipated, or**
  b. **Piggy-backing on existing large-scale infrastructures and info/ctrl access is feasible**
- **NewVectors examples:**
  a. **Self-Organizing Information for Intelligence Analyst Collaboration**
     (see ECOSOA'08 Workshop)
     Swarming Optimization of Digital Car Body Design
     (in transfer to industry)
     Adaptive Control of Swarming Unmanned Vehicles
     (currently in on-board/human-supervised stage of demonstrations)
  b. **Urban Combat / IED Prediction in DCGS-A infrastructure**
     (see SOAPa Tutorial)