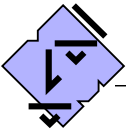# Method Invocation in the Face of Anarchy

Bruce Jacob

**Advanced Computer Architecture Lab
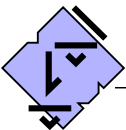University of Michigan**

MOTIVATION

WHAT DO WE WANT?

- Ubiquitous Access — connectivity EVERYWHERE
- Continuity of Access — no interruption of service
- Use of Local Resources — YOUR printer, not MY printer
- Free Market Paradigm — anyone can "hang a shingle"
- Heterogeneity — of systems, languages, networks
- System-Level Resources — not just information (WWW)
- Minimal Administration — we are, after all, lazy ...
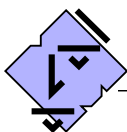
CONCLUSION

- Yeah, right.

DIRECTION

PROBLEMS

- ■ Connectivity
    - ✻ Physical Links
    - ✻ Protocols
    - ✻ Interoperability, Authentication, Reliability, etc.
- ■ Object Methods: Naming
    - ✻ Indexing the World
    - ✻ Forcing Square Pegs into Round Holes
- ■ Object Methods: Interfaces
    - ✻ Procedure Call Paradigm == BAD
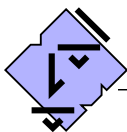   - ✻ Something More Dynamic == GOOD

PROPOSAL

Standard for Mobile Support: SERVICE DISCOVERY

Def'n: **The ability to locate services via a simple semantic description, connect to (previously unknown) servers, and obtain (previously unheard-of) services.**

ENVIRONMENTS:

- ■ One-Size-Fits-All OOS — inappropriate for global scale
- ■ Object Interaction Standard — better, if in public domain
- ■ Java/Mobile Code — assumes uniformity of resource naming
- ■ Mercantile Language — minimal level of assumed knowledge?

REQUIREMENTS

- Safe

- Simple

- Extensible

- Platform-Neutral

DESIGN

- High-Level Language (IDL + Semantic-Laden Variable Names)

- ASCII-Based