Security Panel:
An Architectural Perspective on Security
David Garlan

10th Central and Eastern Europe
Software Engineering Conference
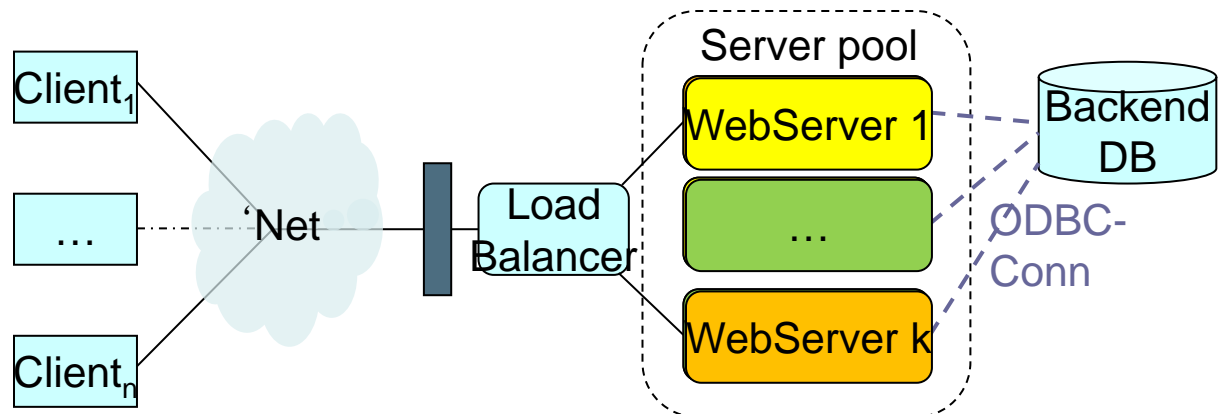in Russia

October 23-25, 2014

2014
CEE-SEC(R)
Software Engineering
Conference in Russia

Carnegie Mellon

isr institute for
SOFTWARE
RESEARCH

Design

- Good architectural design can improve security
  - Designed-in, rather than attached-later
- Example 1: Moving Target Defense

- Example 2: Architecture "hoisting"
  - Architecture assumes responsibility for security

Execution

- Good architectural design can improve run-time resilience
    - Architectures for system adaptation
- Example 1: Self-securing Systems
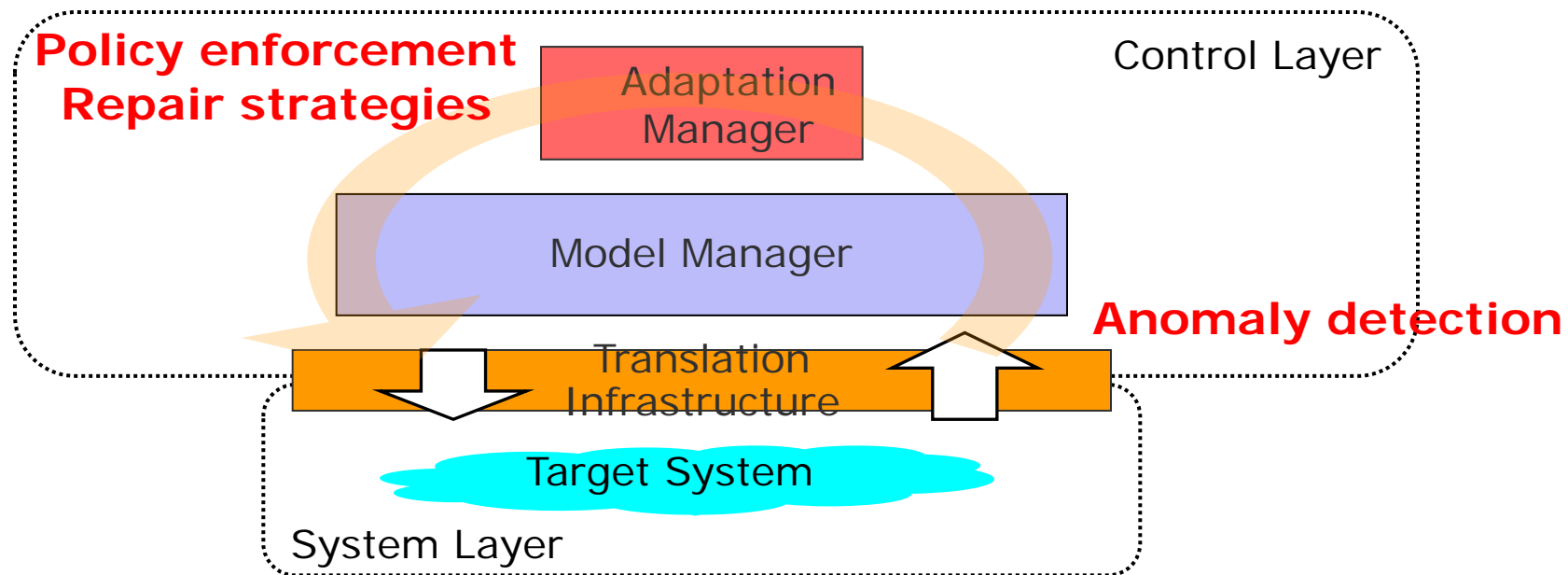
- Example 2: Automated upgrade and patch

- Washington Post, October 17 article: *"Stop worrying about mastermind hackers. Start worrying about the IT guy."*

"the weakest link often involves the inherent fallibility of humans. ... even the most skilled system administrators struggle to keep every computer at large institutions running smoothly, with the proper software updates, security patches and configurations."