Research Agenda for ANSA

ANSA Work Plan 1997

ANSA Team

Lou Gerstner, IBM says.....

- **New user needs from Internet connectivity**

- **Users creating new applications for customer / partner business-to-business transactions**

- **Vendors offering packaged solutions**

- **Vendors consolidating around component-based architectures**

- **Emergent model of *mobile*, *dynamic*, *evolutionary* system roll-out and integration**

New User Needs

- **Business-to-Business electronic commerce**
  - *internet enables cost-effective EDI*

- **Rapid service definition and deployment**

- **Across the net install and upgrade**

- **Predictable quality of service**

- **Support for mobile user**

- **Media integration**

Background (1)

- **WWW evolves to transactional electronic commerce**
  - *heterogeneity, federation, extensible*

- **Rapid systems integration via dynamic configuration of downloaded modules**

- **Simplicity of Java enables tool-based approaches to building application-specific infrastructures**

Background (2)

- **Connectivity becomes ubiquitous, enabling widespread use of active content, autonomous agents, cooperating groups of users and business-to-business processes**

- **Telecoms supports virtual networks with controllable QoS and rapid provisioning of user-oriented services**

- **Network computing emerges as a new server-centric paradigm**

What Contribution Can ANSA Make?

ANSA Strengths

- **Architectural principles from ODP**

- **Open ORB, resource control, multimedia from ANSA/DIMMA**

- **Innovative network structures from RETINA, DCAN and PEGASUS-2 work**

- **Transactional electronic commerce from ANSA/ISF, E2S**

- **Dynamic "middleware" components from ANSA/Reflective Java**

Switches and Servers

Users

Intranet   **Extranet**
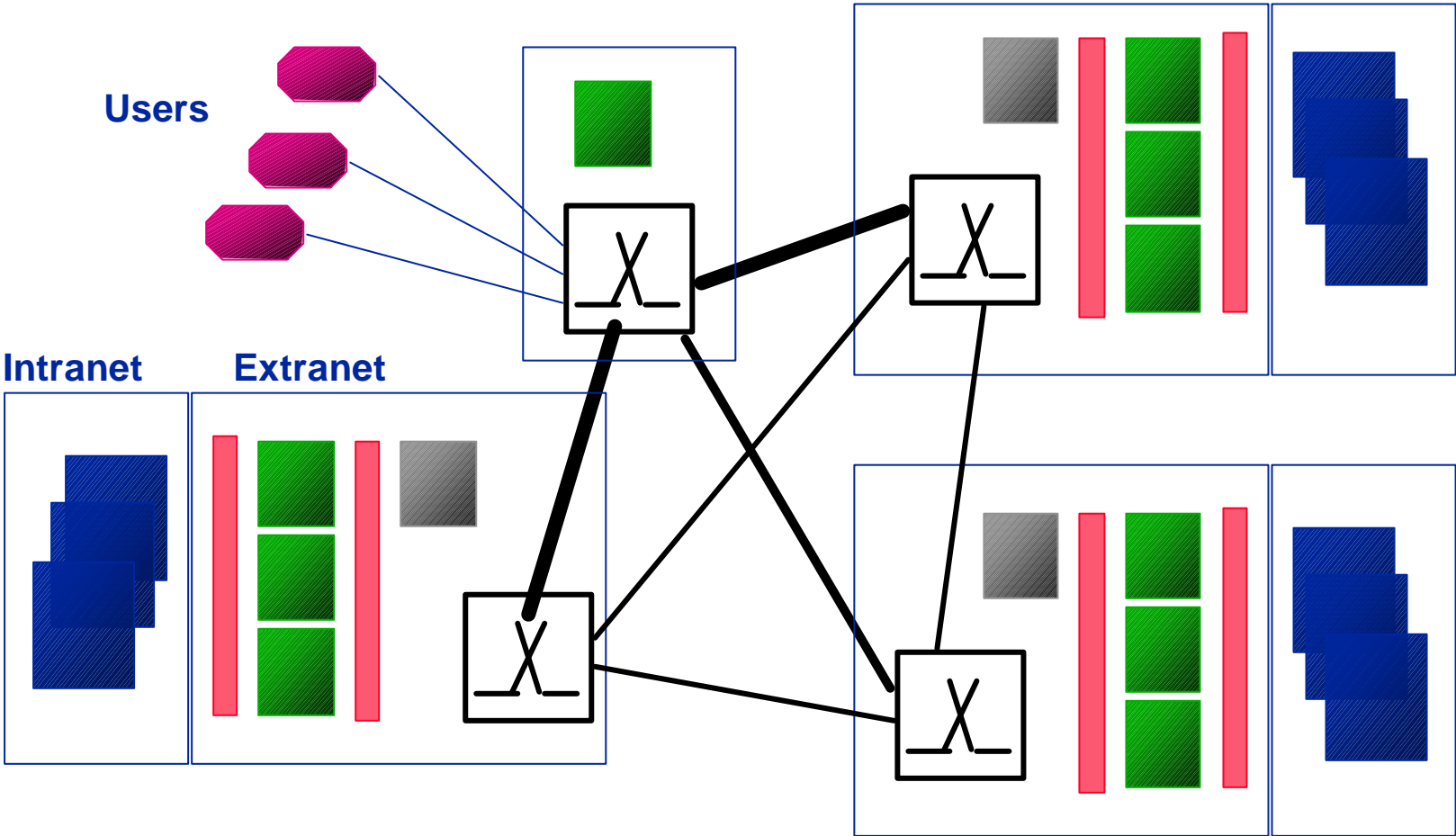
Switched Internet

Mobile Code in Global Nets

- **Use PUPPIES concept to define an application context**
  - *ESPRIT FollowMe project with application partners*
- **Use FLEXINET concept to define an innovative open network architecture**
  - *ESPRIT Pegasus project with networking partners*
- **FLEXINET enables PUPPIES**

Benefits to Sponsors

- **Early access to and feedback on**

  - New application paradigms

  - New network structures

  - New system architectures

ANSA will produce

- **Investigation Reports**
  - *studies, scenarios, research summaries*

- **Architecture Reports**
  - *frameworks, interfaces, design principles*

- **Robust Prototypes**
  - *seedware*

- **Evaluation Reports**
  - *trials, benefit analysis*

Activities

- *Puppies*
  - Architecture for networked intelligent agents

- *FlexiNet*
  - Architecture for dynamically creating application-specific virtual networks

- FlexiNet provides the infrastructure needed by FollowMe's agents.

- Benefit from DIMMA and Reflective Java work

External Calibration

- **OpenSIG Conference**

  - *Cambridge, April 1997*

- **First IEEE Conference on Open Architectures and Network Programming**

  - *San Francisco, April 1998*

    Recent advances in distributed systems and transportable software together with increasing demand for better control of quality of service in multiservices networks are driving a reexamination of network software architectures. There is a new opportunity to reconcile the perspectives of the computing and communication communities in new network architectures that support service creation, QoS control, and the joint allocation of computing and communications resources.

    OPENARCH will offer a forum for the communication of experimental as well as theoretical results aimed at a better understanding of the overall networking architecture and its realization in software. It will encourage a shift of the processes of service creation, resource allocation and control from ad-hoc solutions to a discipline of network programming.