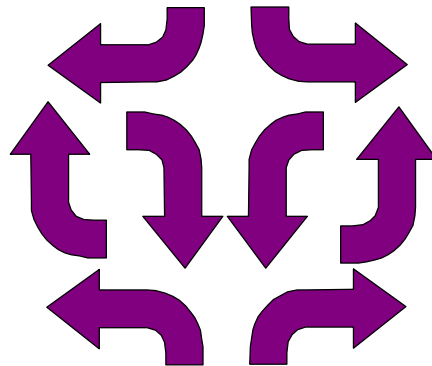


# *FlexiNet*



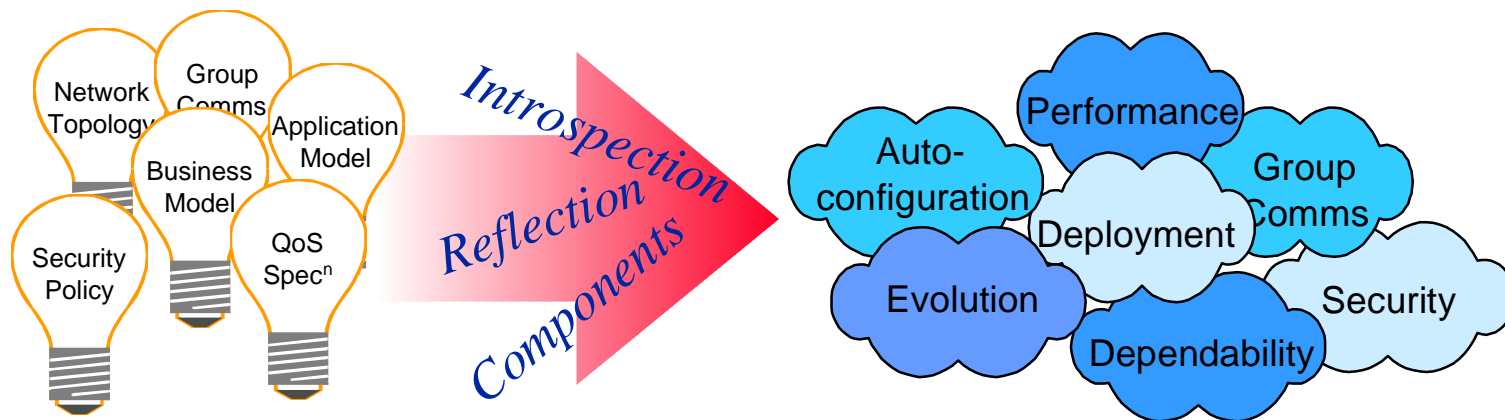
1. Overview and Direction
2. Virtual Networks Demonstration



# *FlexiNet Vision*

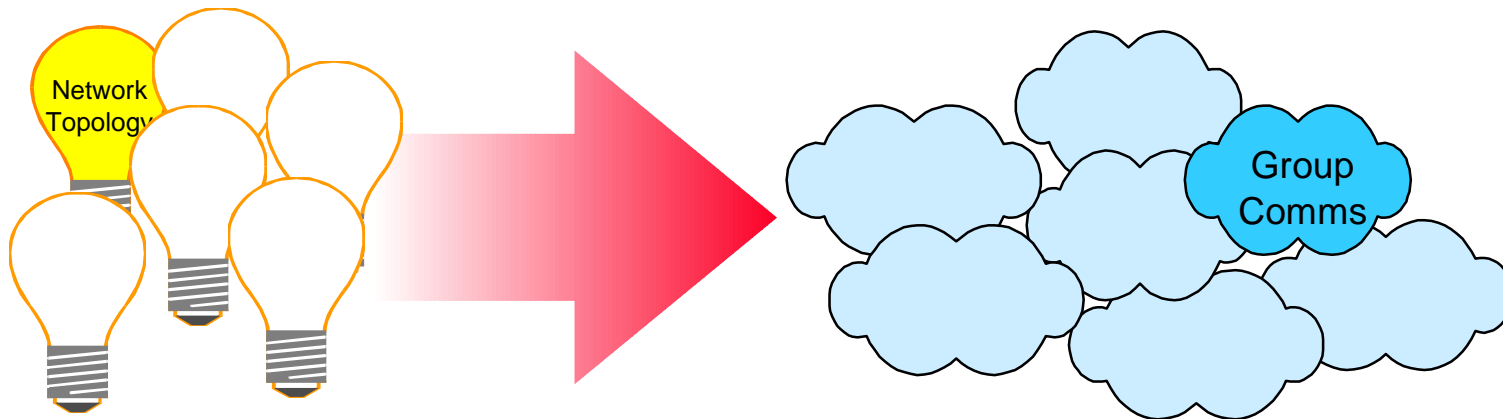
- Wide area of interest

*Using meta information in component systems*



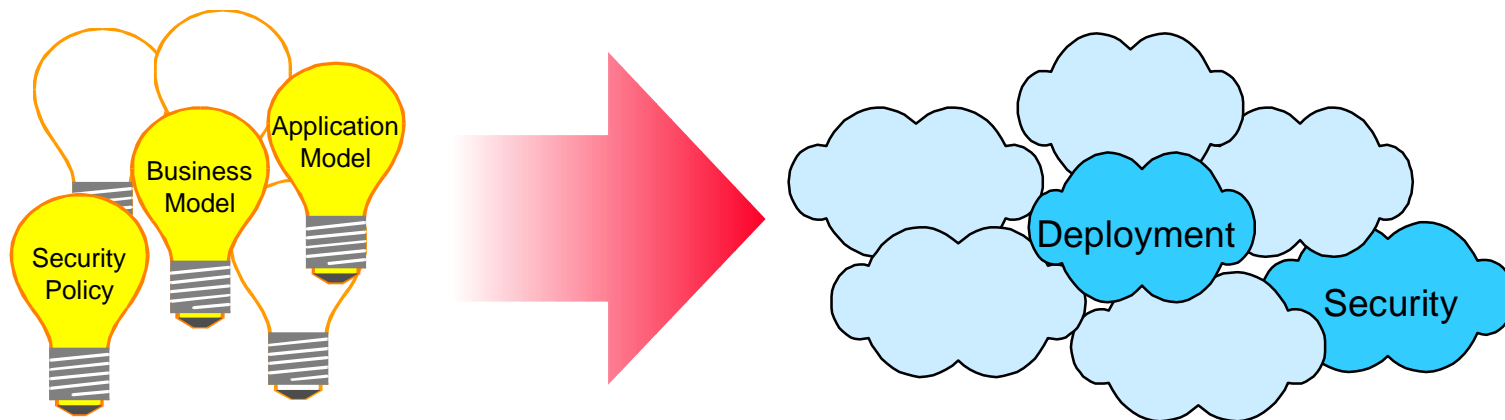
# *FlexiNet Focus*

- Phase 1: Open Signalling and Virtual Networks



# *FlexiNet Focus*

- Phase 2: Flexible deployment and management.



# *Problem Area*

- Many distributed systems technologies
  - CORBA, RMI, TCP/IP, ANSAware
  - *new and improved versions constantly appearing*
- Businesses wish to use proven software
  - COTS, Legacy, Custom Built
- Applications are becoming increasingly complex
  - Span Organizational Boundaries
- Need to manage these applications
  - Deployment, Security, Evolution, Auditing, Performance...



- Cost of software ownership is increasing
  - deployment
  - evolution,
  - management
  
- Cost of software authoring is increasing
  - distribution awareness
  - security awareness,
  - policy awareness
  
- Existing technologies provide partial solutions
  - component systems
  - modelling
  - object request brokering



# *How can we leverage current technologies to drive management?*

**Now**

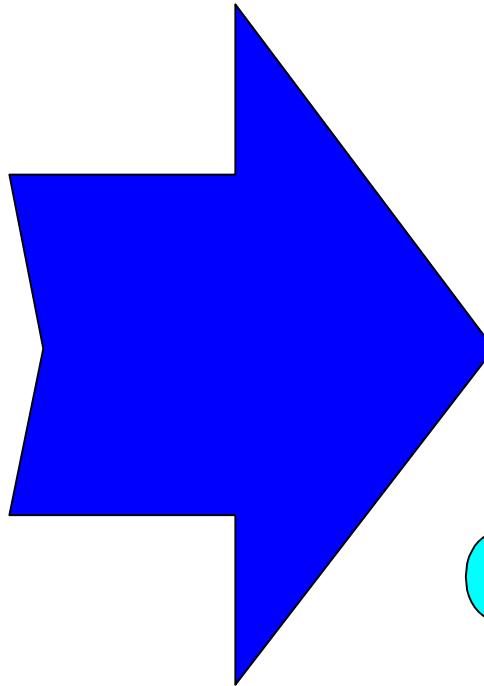
*Component Systems*

*Introspective Hooks*

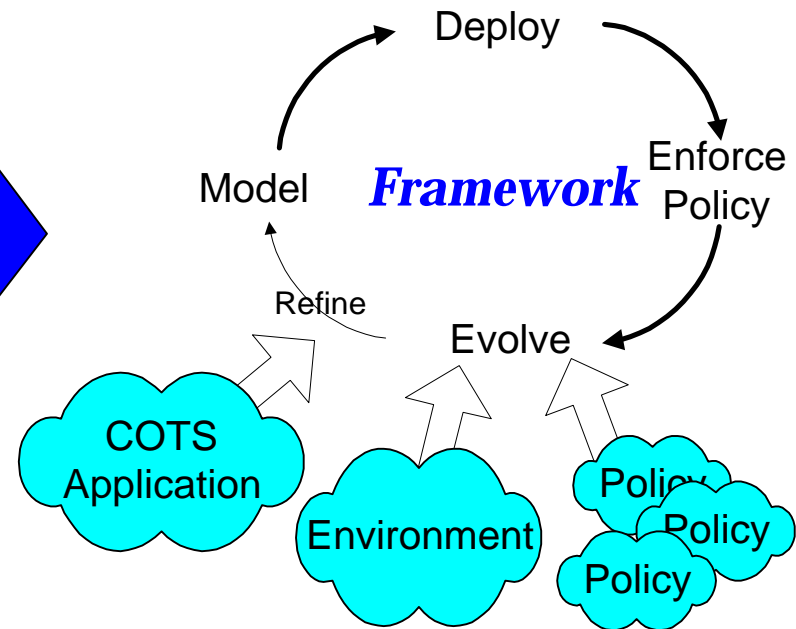
*Modeling*

*Policy Definition*

*Generic Support*



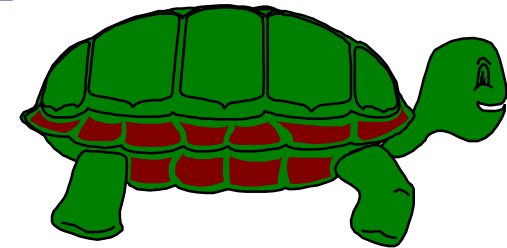
**Goal**



# Options

## ① Custom build deployment tolerant applications

- Hard and expensive
- Performance is terrible
- Does not address management problems



## ② Restrict application deployment

- Don't allow changes in use of environment
- Not realistic
- Does not address management problems



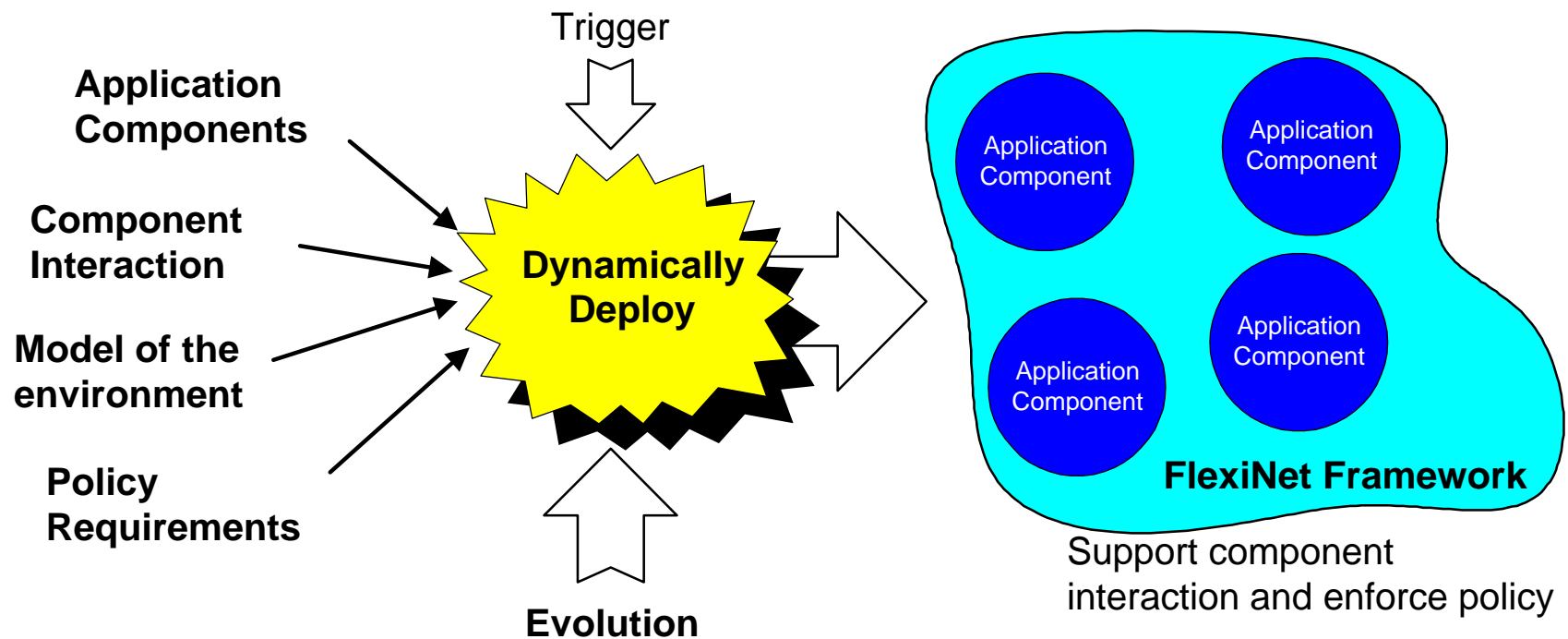
*Cannot use existing COTS*





### 3 Business Centric Management Framework

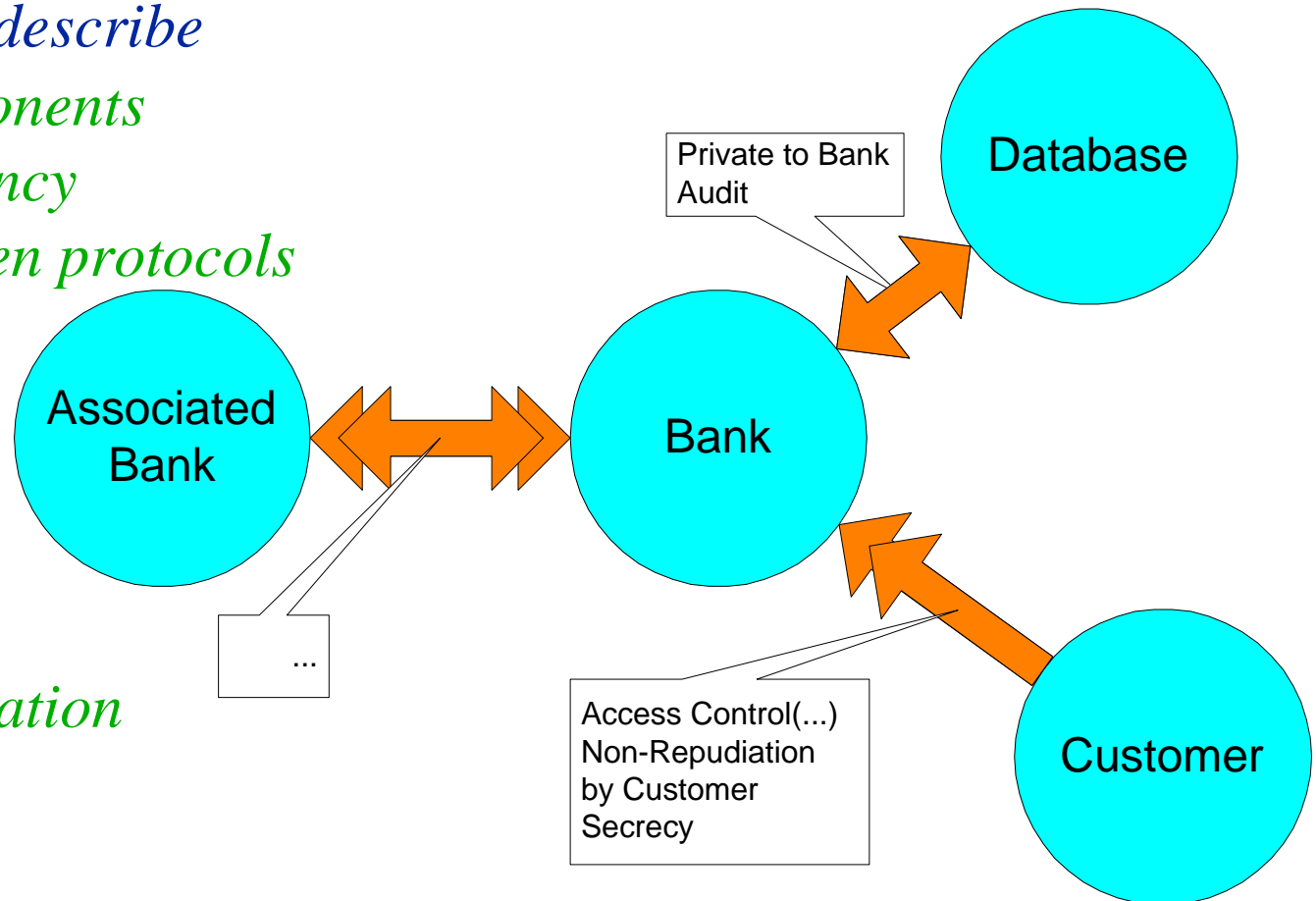
- Model business requirements
- Control applications' interaction



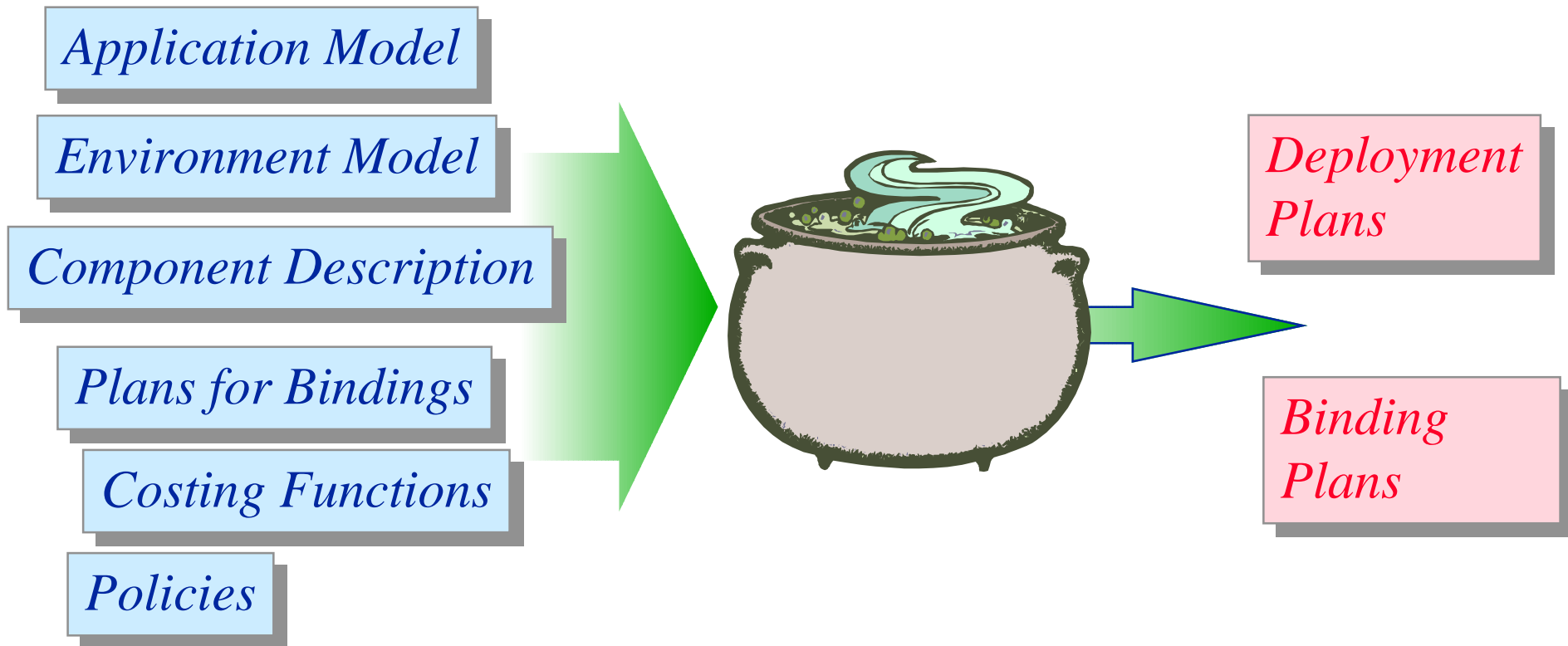
# Modeling Deployment Issues

Annotate ODP model to describe

- Location of components
- Failure transparency
- Adaptation between protocols
- Dependability
- Secrecy
- Authentication
- Restricting Scope
- Session Control
- Group Communication
- ...

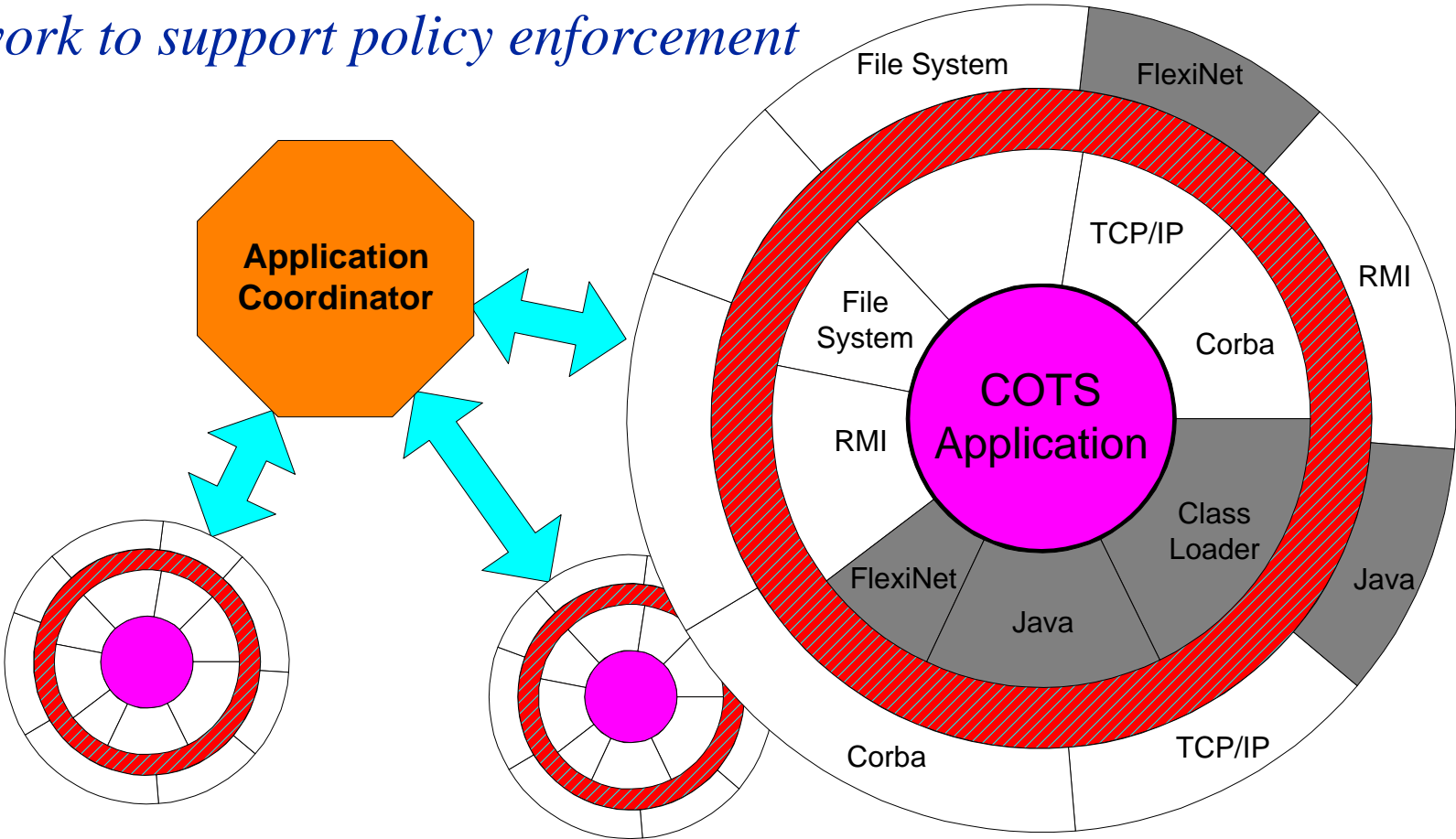


# *Strategy for Deployment*



# FlexiNet Framework

Framework to support policy enforcement

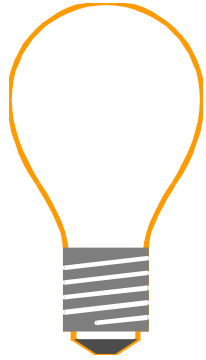


# *Benefits*

- Control the application as a whole
- Clear separation of management and function
- Framework can be used to deploy COTS applications
- Support for cross-organization applications



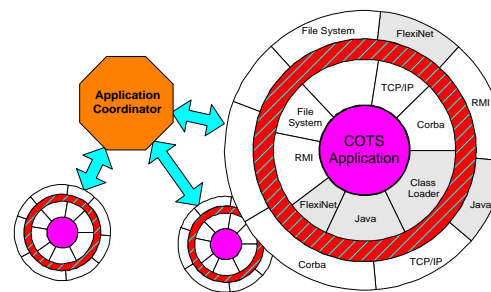
# Three Work Packages



Specification

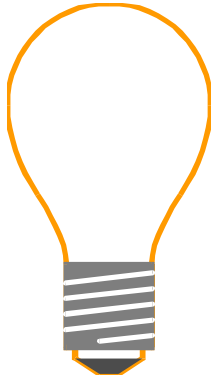


Deployment & Policy  
Enforcement Plans



Execution  
Framework





# WP1: Specification

*Report: Extending ODP for deployment*

*Report: QoS*

*Report: Security Policy Specification*

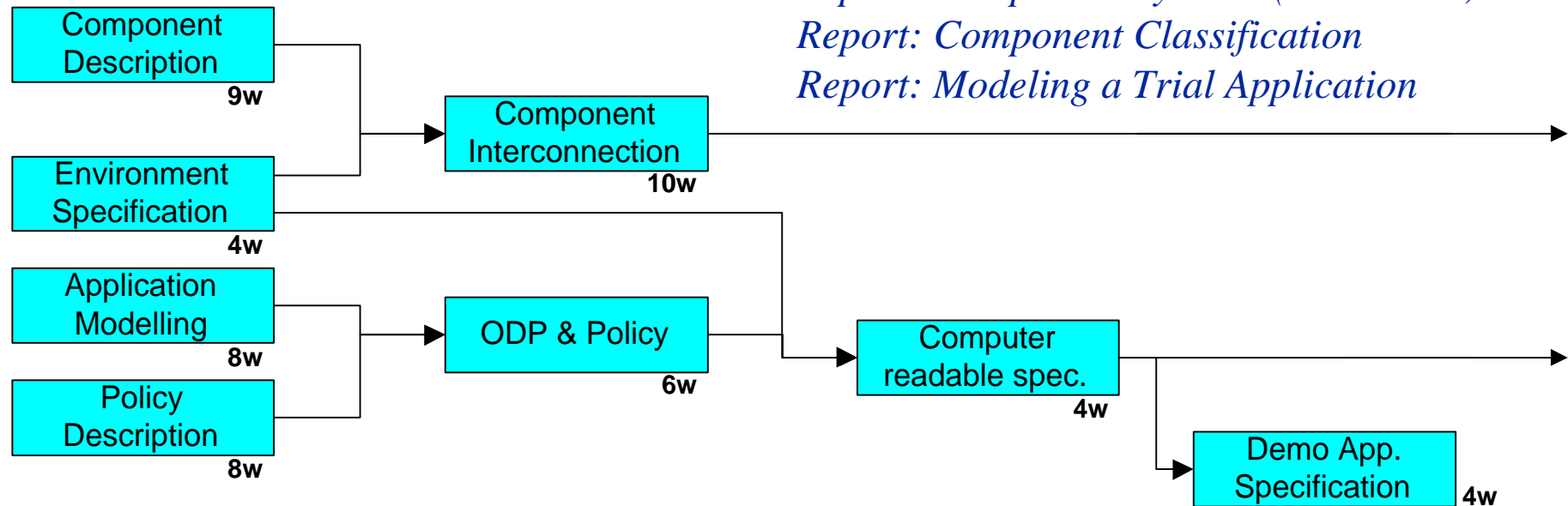
*Report: Environment Specification*

*Report: Extensible MicroKernel*

*Report: Component Systems (JavaBeans, ActiveX)*

*Report: Component Classification*

*Report: Modeling a Trial Application*



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*(based on ANSA funding for 4 person years)*

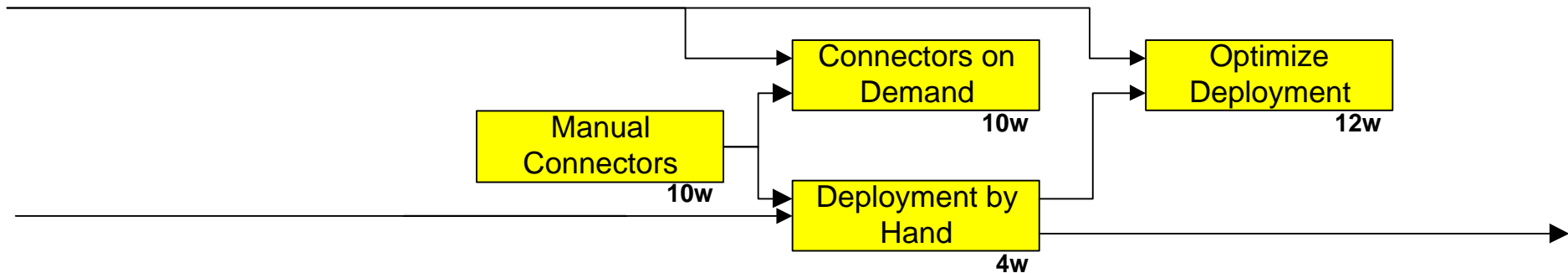


## *WP2: Policy Enforcement*

*Code: Optimizing Deployment*

*Code: Building Connectors Automatically*

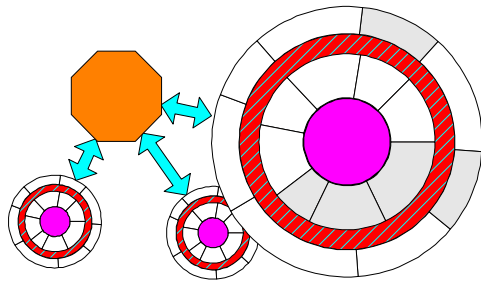
*Report: Specifying Deployment Information*



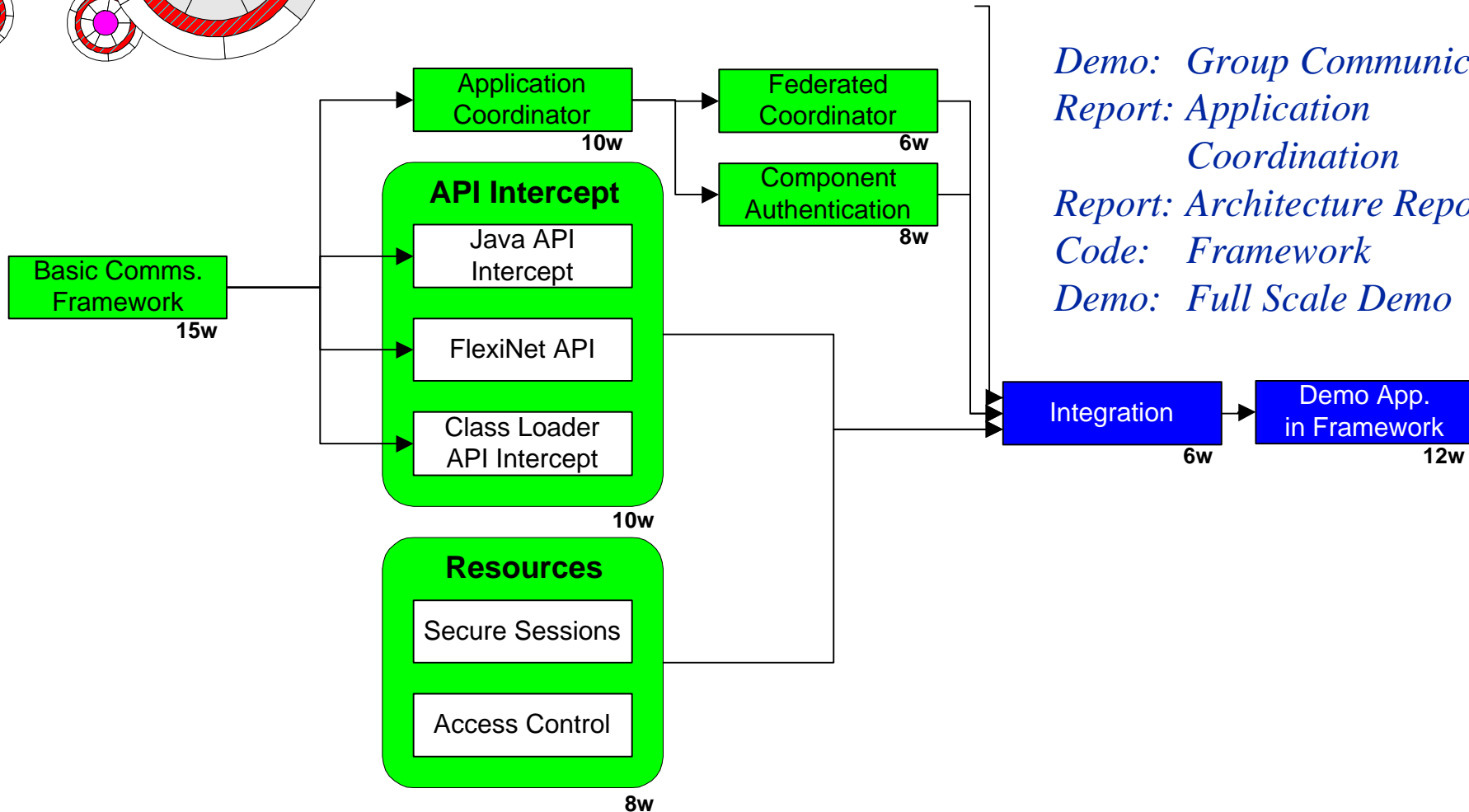
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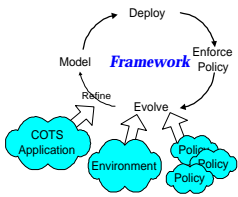


# WP3: Framework

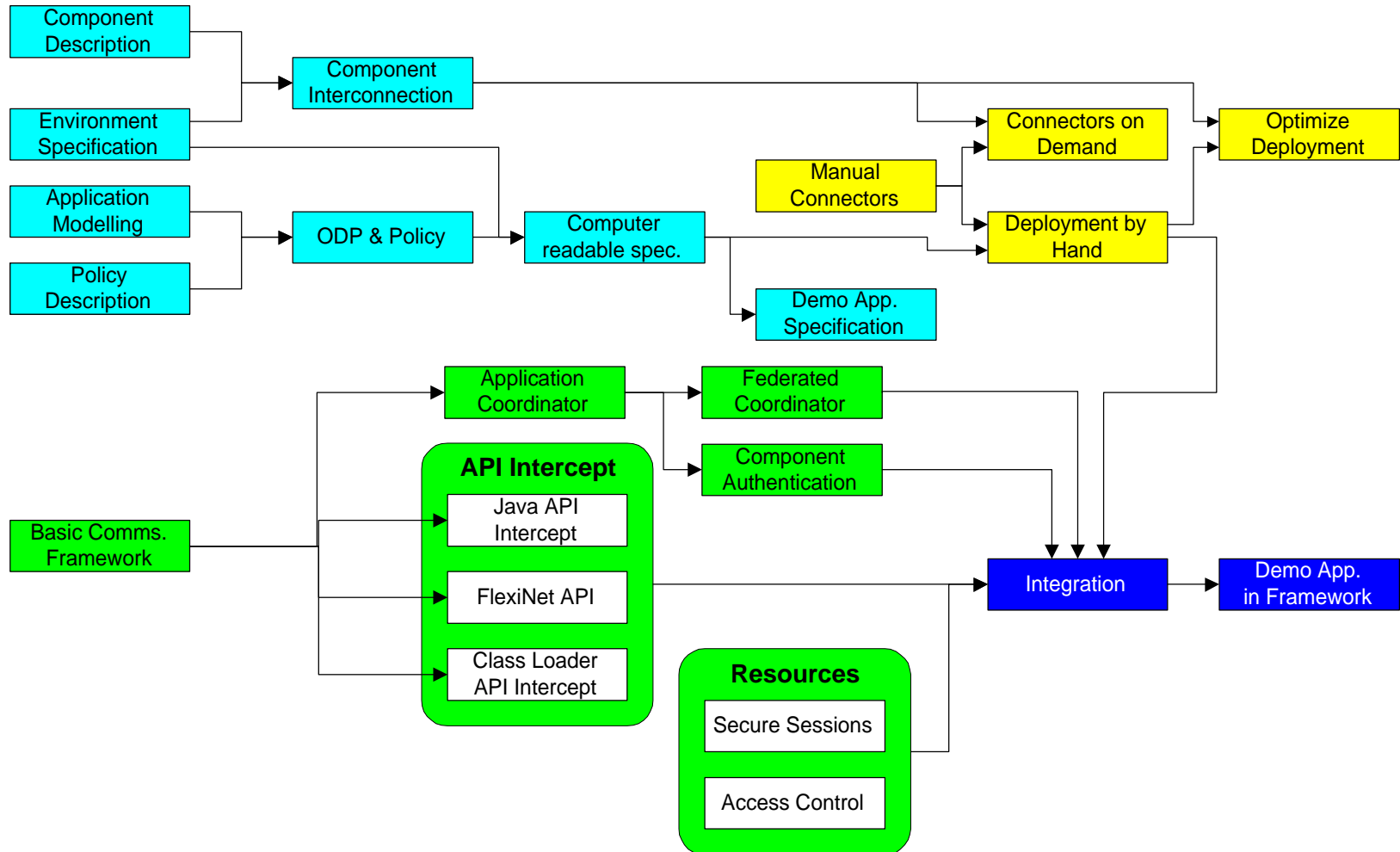


*Demo: Group Communication*  
*Report: Application*  
*Coordination*  
*Report: Architecture Report*  
*Code: Framework*  
*Demo: Full Scale Demo*





# Work Packages



## *Deliverables* based on 4 person years effort

<b>Deliverable</b>	<b>Due End</b>
QoS Report	Jun-97
Extensible MicroKernel Report	Jul-97
Security Specification Report	Jul-97
JavaBeans .v. ActiveX Report	Aug-97
Environment Specification Report	Aug-97
ODP for Deployment Report	Oct-97
Coordination Architecture Report	Nov-97
Trial Application Specification Report	Nov-97
Specifying Deployment Information Report	Nov-97
Binding Component Specification Report	Dec-97
Optimizing Deployment Report & Code	Jan-98
Binding Plan Report	Jan-98
Full Scale Demo	Feb-98
Architecture Report	Feb-98
Framework (code) & User Documentation	Feb-98



# *Exploitation*

- **Oct 97** Extended ODP Modelling for Deployment
  - Methodology for describing deployment and policy requirements
- **Feb 98** Framework for application deployment
  - Interception of Class Loader and Java Interface APIs
  - Support for policy enforcement
    - Security policy enforcement as a demonstrator
  - Coordination of deployment and policy enforcement
- **Feb 98** Automated Deployment
  - Dynamically place application components to minimize cost
  - Automatically constructs infrastructure to support policy requirements

