



International Association
of Software Architects

Introduction to IASA

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www.iasahome.org



- What is Software Architecture?
 - Software Architecture, IT Architecture, Enterprise Architecture
- IASA - IT Architect Skill Library
- Conclusion

Definition of Software Architecture



- The **software architecture** of a program or computing system is the **structure or structures of the system**, which **comprise software elements**, the **external visible properties of those elements**, and the **relationships among them**.

IT Architecture?

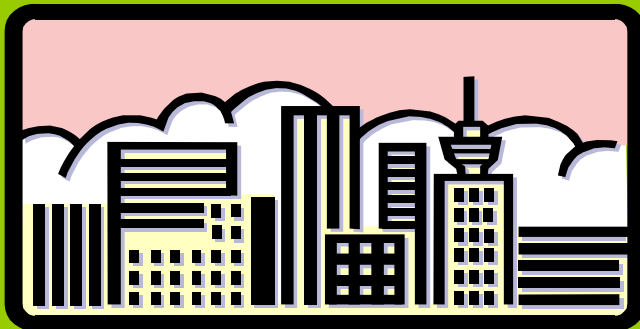


“a system’s fundamental organization, embodied in its components, their relationships to each other and the environment, and the principles guiding its design and evolution.”

Definition as used in ANSI/IEEE - 1471

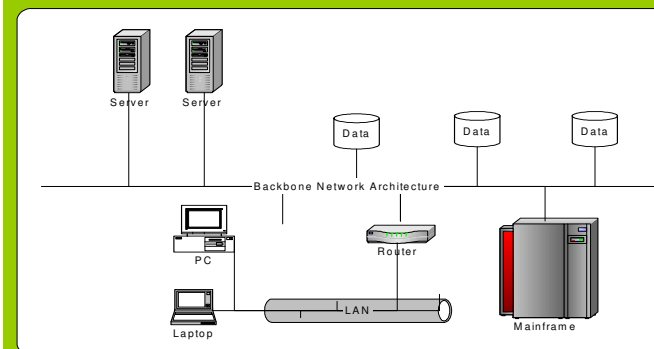
Building Architecture:

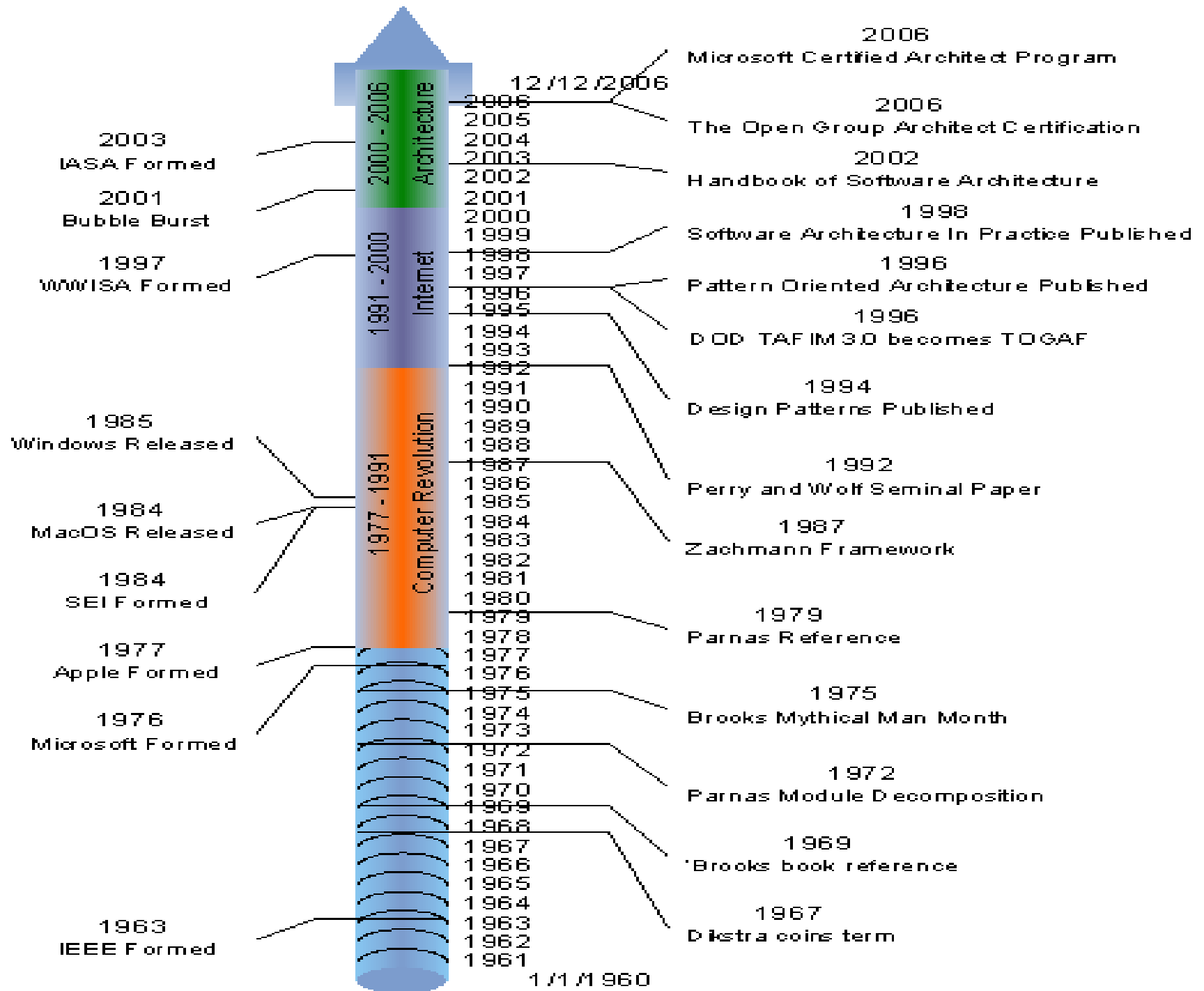
- Models & Concepts
- Blueprints
- Bills of Material
- Building Codes
- Workmanship Standards



IT Architecture:

- Patterns & Frameworks
- Blueprint
- Buy Lists & Vendors
- Standards & interfaces
- Software Qualities (metrics)



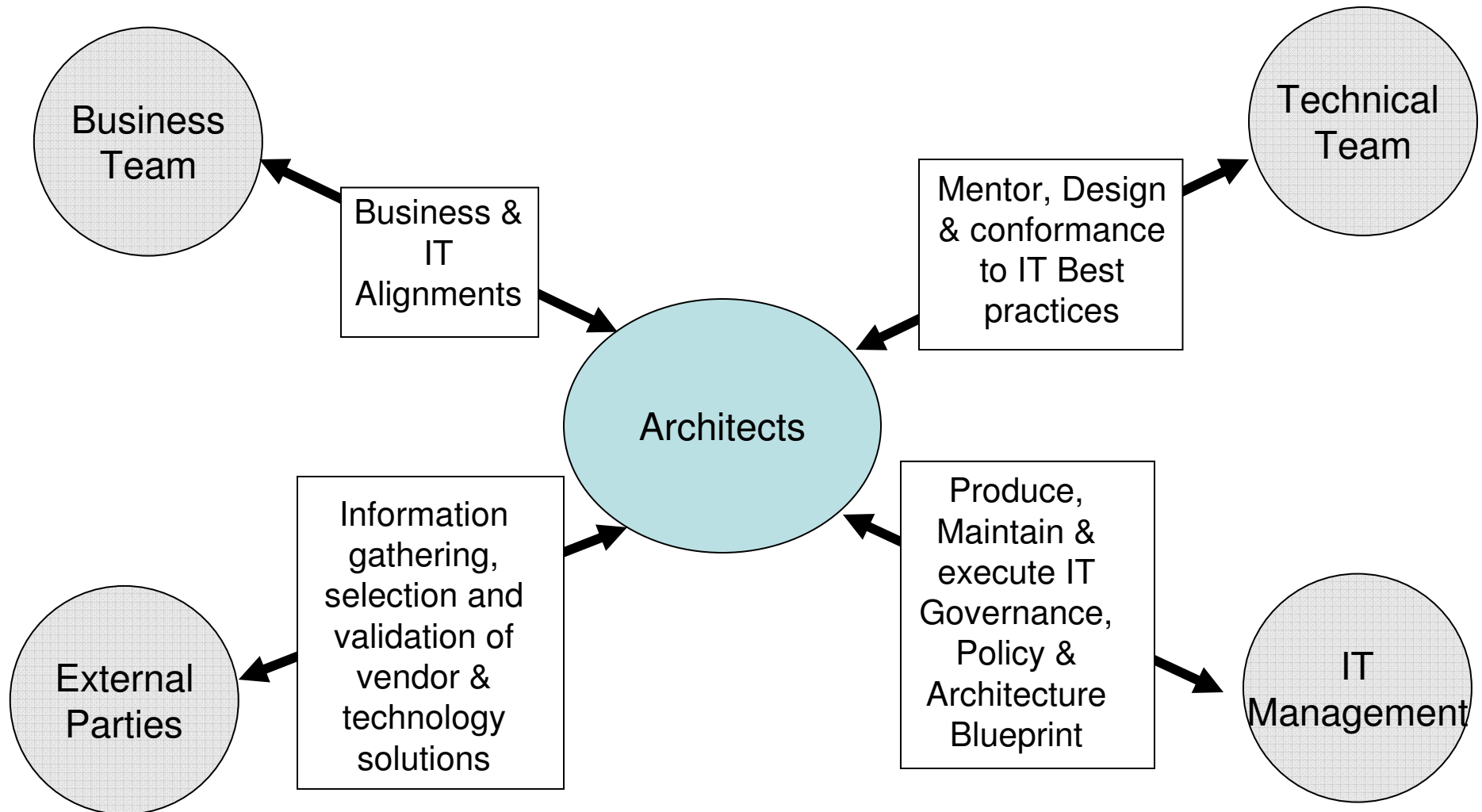


Architecture Activities

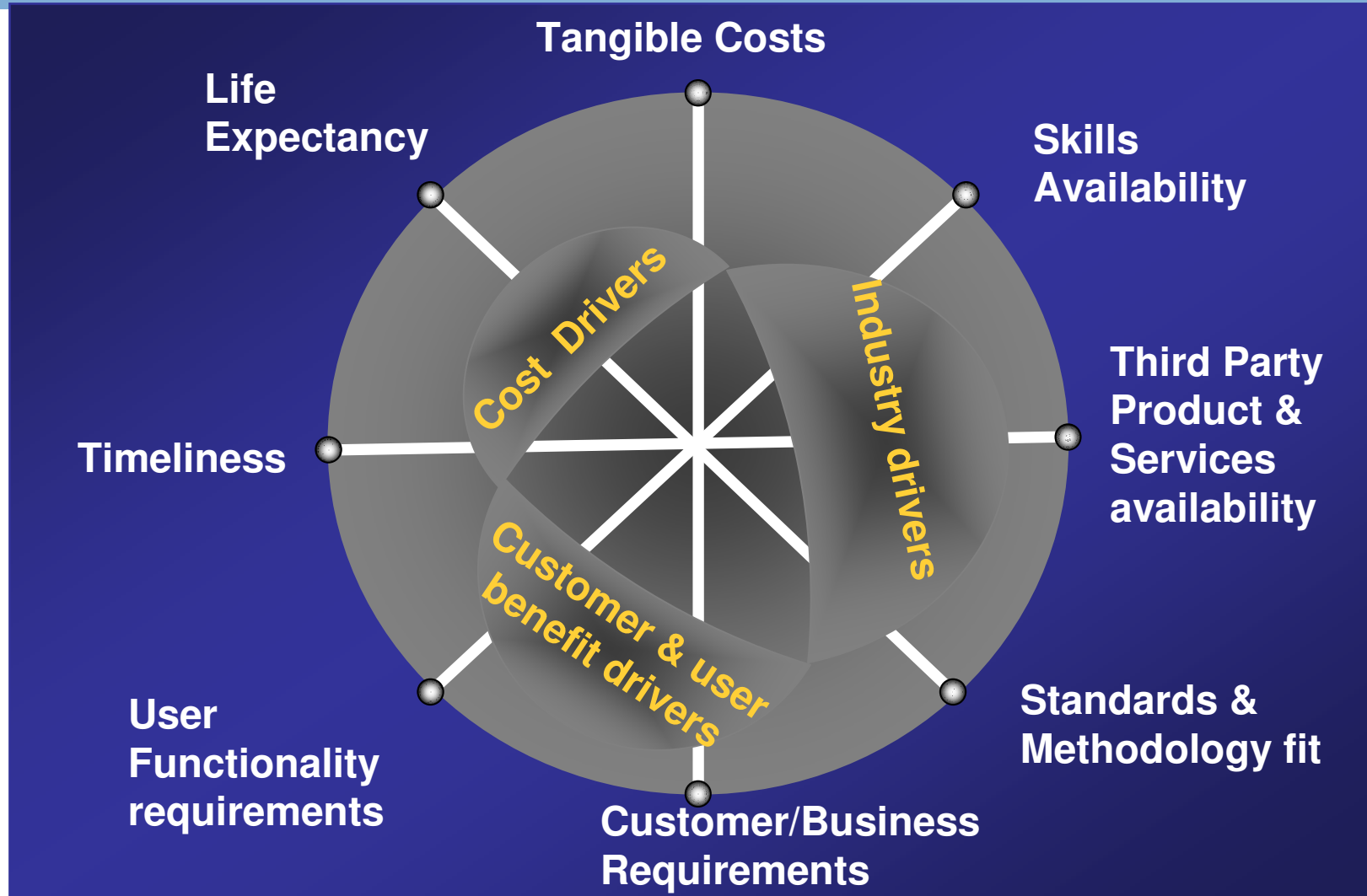


- Creating the business case for the system
- Understanding the requirements
- Creating or selecting the architecture
- Documenting and communicating the architecture
- Analyzing or evaluating the architecture
- Implementing the system based on the architecture
- Ensuring that the implementation conforms to the architecture

Who do Architects Interact with in their job?



How Architects make decision? "Based on 3 Drivers & 8 Key Factors"



10 Dimension of IT Architect

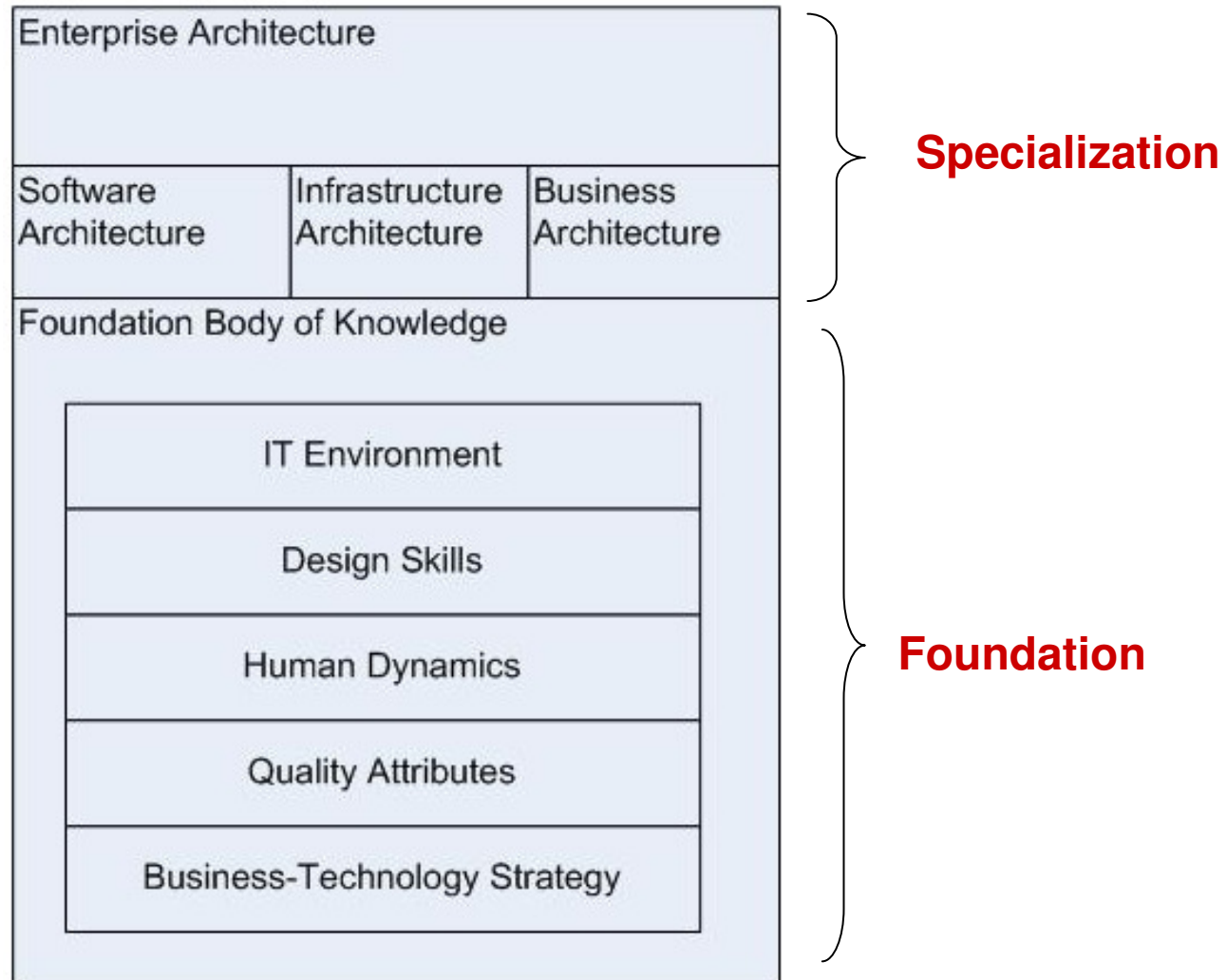


- Leadership
- Mentorship
- Business knowledge
- Presentation skill
- Communication skill
- Technical skill
- Marketing skill
- Coaching skill
- Office Politic
- Entrepreneurship



- Developed by IASA - www.iasahome.org/web/home/skillset
- Containing articles for each primary skills of IT architects (will be further enhanced by training materials)
- Currently 633 pages of information classified as
 - The IT Environment
 - Business Technology Strategy
 - Design
 - Human Dynamics
 - Quality Attributes
 - Software Architectures
 - Infrastructure

Skill Taxonomy (Body of Knowledge)



IT Environment

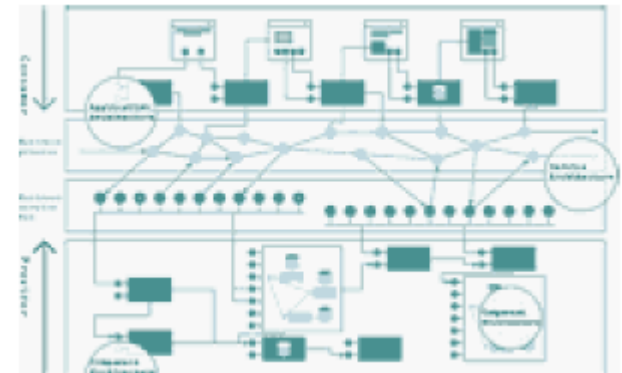


- Capability Mix Identification (assessing an organization's readiness for change)
- Compliance: Audits, Certification, Licensing and Regulation
- Cost Estimation and Tracking
- Software Engineering
- Governance: how to implement business policies
- Infrastructure Landscape
- Knowledge Management System
- Organizational Dynamics
- Organizational Structure
- Outsourcing
- Resource Balancing and Management
- Stakeholder Definition
- Vendor Management
- Anti-virus and Patch Management

Design Skills



- Architecture Description
- **Architecture Styles**
- Views and Viewpoints
- **Context**
- Design Diagramming, Notation and Deliverables
- **Solution Architectures Design Methodologies**
- Architecture Evaluation and Review Practices
- **Domain-specific Modeling Languages**
- Optimizing Techniques
- **Patterns and Best Practices**
- Frameworks, Patterns and Components
- **Prototypes**
- Synthesis and Problem Solving
- **Traceability throughout the Lifecycle**



Software Architecture



- Layering
- Business Intelligence
- Asset Management
- CRM
- Build and Development Environments
- End-to-end Test and Design Implementation
- Implementing the user experience
- Information Architecture
- Integrated Development Environments and Modeling Tools
- Internationalization
- Mainframe Development and Design
- Messaging Technology
- Personalization
- Platforms and Frameworks
- Programming Languages
- Proof-of-concept Design

Human Dynamics



- Conflict Management
- Crisis Management
- Customer Relations
- Leadership
- Mentoring
- Negotiation Skills
- Presentation Skills
- Selling Skills
- Situational Awareness
- Team Building and Management

Quality Attributes



- Implementing system quality attributes
- Manageability, Maintainability and Supportability
- Monitoring quality attributes
- Performance, Extensibility, Flexibility
- Quality Attribute Auditing
- Reliability, Availability, Scalability
- Security
- Usability, Localization, Accessibility, and Personalization/Customization



Level	Aspiring	Associate	Professional	Master
IT Experience	variable	3-6 yrs	6-10 yrs	10+
Arch Experience	0	1-4 yrs	5-8yrs	9+ yrs
Needs	<ul style="list-style-type: none"> ➤ Architecture Knowledge Base ➤ Professional Description 	<ul style="list-style-type: none"> ➤ Body of Knowledge ➤ Education ➤ Experience ➤ Mentor 	<ul style="list-style-type: none"> ➤ Continuing Education ➤ Best Practices ➤ Advocacy ➤ Training ➤ Professional Opportunities 	<ul style="list-style-type: none"> ➤ Industry Recognition ➤ Research ➤ Professional Opportunities ➤ Advocacy ➤ Industry Opportunity
Requirements	None	None	<ul style="list-style-type: none"> ➤ Professional Certification ➤ Continuing Education 	<ul style="list-style-type: none"> ➤ Master Certification ➤ Continuing Education ➤ Industry Impact

* years experience are averages we have determined from member polling

Career Path



- **Aspiring Architect**
 - Those who are interested to become an architect and search for more
- **Associate Architect**
 - 1-4 years of experience in IT architecture, 3-6 years in IT overall
 - Work with other professional architect
- **Professional Architect**
 - 4-7 years of experience in IT architecture, 6-10 years in IT overall
 - Perform the majority of the work on mid-to-large IT Architecture
- **Master Architect**
 - +7 years of IT architecture experience with 10-15+ years overall in IT
 - Work as a chief architect on largest projects (think MSN or Google search engine, massive ERP systems, product architectures or large e-commerce and integration systems)
 - Thought leaders in the field if IT architecture

Conclusion



- Architects are involved in the ***IT environment*** and must understand it deeply.
- Architects do a significant amount of ***Design*** (whether they code it or not).
- Architects focus on ***Quality Attributes*** to ensure the consistency of their designs in context.
- Architects must have strong skills in ***Human Dynamics*** including communication and leadership.
- Architects must have a strong capability to create ***Business + Technology Strategy***.

Summary



■ Call to action

- Call for unity in making Software Architect as a profession
- Please visit <http://www.iasahome.org>
- Join and be part of the pioneer global software architecture team:
 - To contribute to the growth of Local Software Economy
 - To raise the bar of the software quality
 - To be part of the larger architect community across APAC and beyond
 - To have regional speaking exposure as part of Regional Speaker Bureau across Asia Pacific and beyond

- <http://apac.iasahome.org>

- <http://malaysia.iasahome.org>

- <http://singapore.iasahome.org>

- <http://korea.iasahome.org>

- <http://japan.iasahome.org>

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- <http://china.iasahome.org>

- <http://phillippines.iasahome.org>

- <http://hongkong.iasahome.org>



■ Started off in May 2007

- Concerted effort by architects from the Industry, Vendors, Academic, Government & Non Government Organization
 - Vendor (Microsoft, IBM, Oracle, CA)
 - Software House (Router, CP, PTT_ICT, KCS)
 - Academics (AIT, KU, CU, KMUTT)
 - NSTDA(NECTEC, CCP, SWP), MICT
- As the Special Interest Group (SIG)

■ Become an active member with IASA Thailand Chapter

- if you would like to become an IT architect
- you want access to architect content
- you want access to IT architects
- you are looking for training, mentoring, or other services in architecture
- Look for certification and status for entry into full professional status



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Thank you