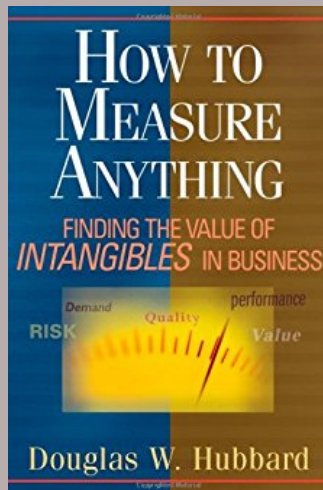


# How to Architect Anything

Peter Eeles



Worldwide Lead for DevOps Adoption  
Executive IT Architect  
IBM Cloud  
[peter.eeles@uk.ibm.com](mailto:peter.eeles@uk.ibm.com)

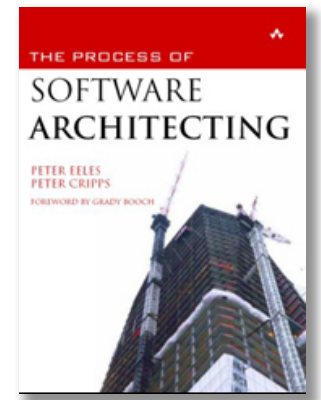
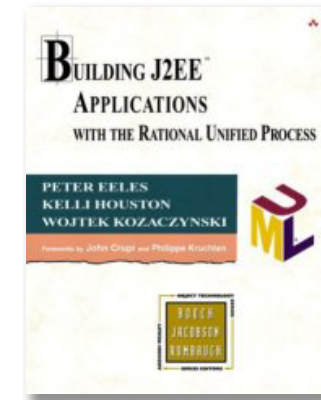
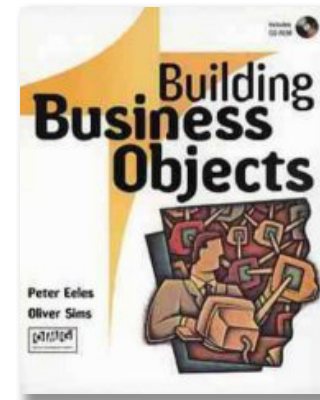


# IBM Hybrid Cloud



# About Me

- Graduated in 1985
  - Mechanical engineering @ Dowty Fuel Systems
  - Software engineering @ Racal
  - Distributed computing @ Integrated Objects
  - Iterative / agile development @ Rational Software
  - Enterprises, industries, devops and cloud @ IBM
- 
- Personal website at [architecting.co.uk](http://architecting.co.uk)
  - Current playground at [bizdevops.uk](http://bizdevops.uk)





# When I'm not working ...

- [ukbutterflies.co.uk](http://ukbutterflies.co.uk)
- [dispar.org](http://dispar.org)
- [gardenbutterflysurvey.org](http://gardenbutterflysurvey.org)



# The Short Version of This Talk

1. Successful architects share common personal traits
2. Successful architects follow repeatable practices
3. These traits and practices can be applied to ... anything!





# Traits

# You exhibit these personal traits ...



<http://briandownard.com/leadership-skills-list>

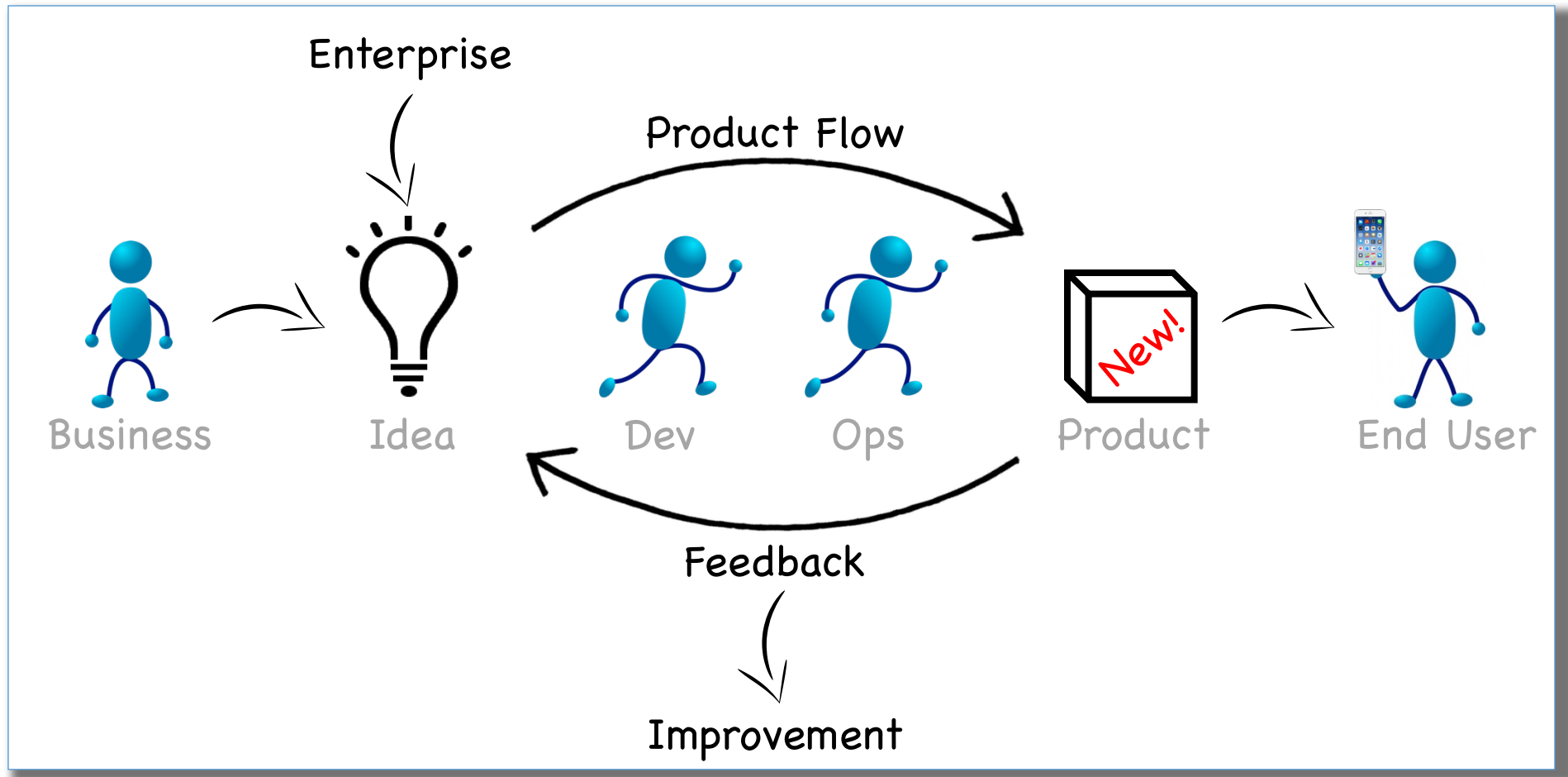
## 1. You are a technical leader

- |                                 |                                       |                                      |                                   |
|---------------------------------|---------------------------------------|--------------------------------------|-----------------------------------|
| 1. Self-motivated               | 26. Self-assurance                    | 51. Get the best from others         | 76. Flexible                      |
| 2. Set high standards           | 27. Maturity                          | 52. Understand what motivates others | 77. Manage setbacks/uncertainty   |
| 3. Confident                    | 28. Lead by example                   | 53. Takes responsibility             | 78. Organized                     |
| 4. Optimistic and positive      | 29. Relationship building             | 54. Rewarding                        | 79. Creative                      |
| 5. Accountable                  | 30. Social skills                     | 55. Evaluative                       | 80. Intuition                     |
| 6. Courageous                   | 31. Public speaking / speaking skills | 56. Conduct effective meetings       | 81. Seeks out advice              |
| 7. Engaged                      | 32. Honesty & Transparency            | 57. Respect for others               | 82. Pursue new experiences        |
| 8. Character                    | 33. Reasonable                        | 58. Coaching key people              | 83. Read, read, read              |
| 9. Humorous                     | 34. Boldness                          | 59. Enable others to act             | 84. Curiosity                     |
| 10. Passionate                  | 35. Listening                         | 60. Set Expectations                 | 85. Competence                    |
| 11. Integrity                   | 36. Presence                          | 61. Fair                             | 86. Focused                       |
| 12. Respectable                 | 37. Authenticity                      | 62. Urgency                          | 87. Intentional Learner           |
| 13. Likable                     | 38. Empathy & Compassion              | 63. Decisiveness                     | 88. Enjoys The Ride               |
| 14. Ethical                     | 39. Ability to confront others        | 64. Commitment to vision             | 89. Improve lives around you      |
| 15. Loyal                       | 40. Empowerment                       | 65. Consistency                      | 90. Foster potential              |
| 16. Charisma                    | 41. Negotiation skills                | 66. Does not fear mistakes/risk      | 91. Belief that success if shared |
| 17. Love your career            | 42. Socially savvy                    | 67. Ability to pivot                 | 92. Help other succeed            |
| 18. Emotional intelligence      | 43. Clarity                           | 68. Open minded                      | 93. Direction                     |
| 19. Emotional control           | 44. Ability to teach                  | 69. Tough-minded                     | 94. Challenge the process         |
| 20. Understand opportunity cost | 45. Interested in feedback            | 70. Resourceful                      | 95. Performance driven            |
| 21. Humility                    | 46. Trust in your team                | 71. Faces obstacles with grace       | 96. Servant/Service               |
| 22. Discipline                  | 47. Ability to inspire                | 72. Street smart                     | 97. Assertive                     |
| 23. Perspective                 | 48. ID team strengths                 | 73. Make good decisions              | 98. Independent                   |
| 24. Risk management             | 49. Sharing your vision               | 74. Strategic thinking               | 99. Conviction                    |
| 25. Time management             | 50. Turn vision into reality          | 75. Proactive                        | 100. Patience                     |
|                                 |                                       |                                      | 101. High-energy                  |



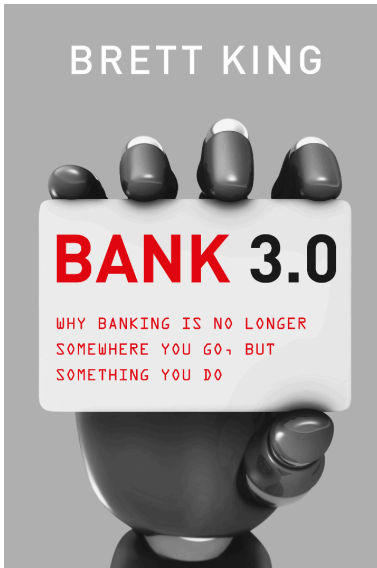
# You exhibit these personal traits ...

1. You are a technical leader
2. You understand the delivery process



# You exhibit these personal traits ...

1. You are a technical leader
2. You understand the delivery process
3. You have knowledge of the business domain



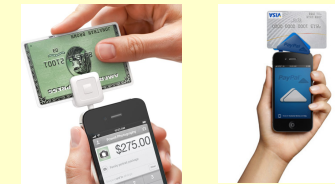
Prepaid debit cards



Online store cards



POS Devices



Peer-to-peer



Mobile wallets



Virtual currencies



Contactless



Mobile Money





## You exhibit these personal traits ...

1. You are a technical leader
2. You understand the delivery process
3. You have knowledge of the business domain
4. You have technology knowledge
5. You have design skills
6. You have programming skills



**Peter Eeles** @petereeles · 9 Feb 2013

Q: What do you call an IT architect that can't program? A: Unqualified. At least, that's my opinion :)

## You exhibit these personal traits ...

1. You are a technical leader
2. You understand the delivery process
3. You have knowledge of the business domain
4. You have technology knowledge
5. You have design skills
6. You have programming skills
7. You are a good communicator





# You exhibit these personal traits ...

1. You are a technical leader
2. You understand the delivery process
3. You have knowledge of the business domain
4. You have technology knowledge
5. You have design skills
6. You have programming skills
7. You are a good communicator
8. You are a mentor



Oliver Sims



Wojtek Kozaczynski



Grady Booch



Philippe Kruchten



Kurt Bittner



Alan Brown



Ivar Jacobson



Murray Cantor



Chris Winter



Rashik Parmar

## You exhibit these personal traits ...

1. You are a technical leader
2. You understand the delivery process
3. You have knowledge of the business domain
4. You have technology knowledge
5. You have design skills
6. You have programming skills
7. You are a good communicator
8. You are a mentor
9. You are aware of organizational politics
10. You are a negotiator





# You apply these practices when you architect ...

## 1. You focus on the architecturally-significant elements

*“Architecture represents the significant design decisions that shape a system, where significant is measured by cost of change.”* – Grady Booch

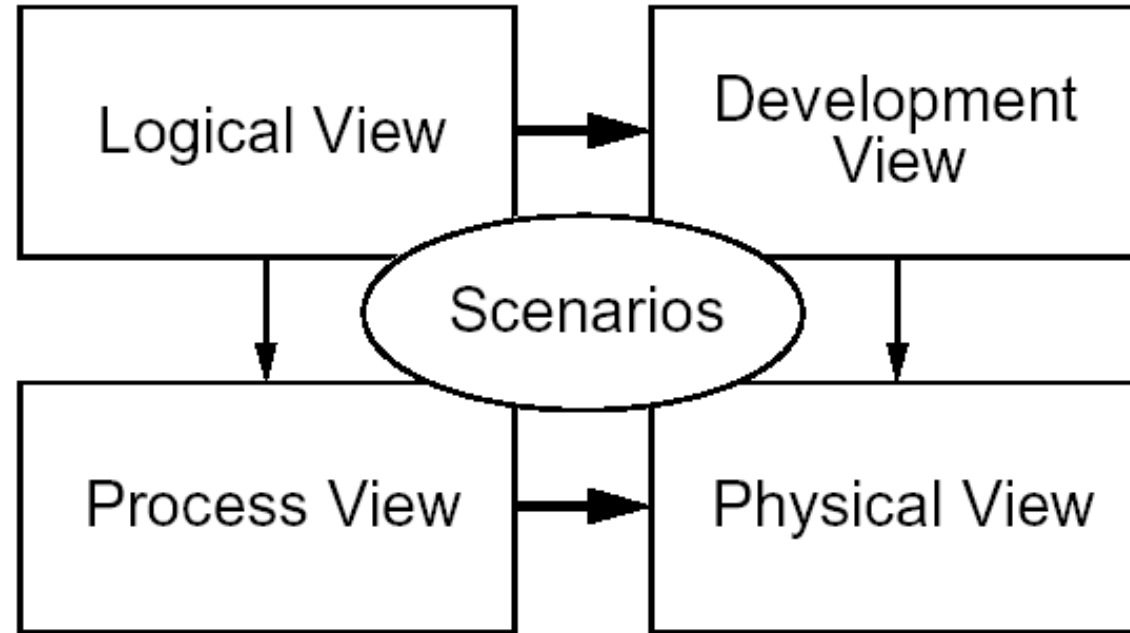


- The element relates to some critical functionality of the system (e.g. monetary transactions)
- The element relates to some critical property of the system (e.g. reliability)
- The element relates to a particular architectural challenge (e.g. external system integration)
- The element is associated with a particular technical risk
- The element relates to a capability that is considered to be unstable
- The element relates to some key element of the solution (e.g. login mechanism)



## You apply these practices when you architect ...

1. You focus on the architecturally-significant elements
2. You consider multiple viewpoints and perspectives



# You apply these practices when you architect ...

1. You focus on the architecturally-significant elements
2. You consider multiple viewpoints and perspectives
3. You meet the needs of stakeholders

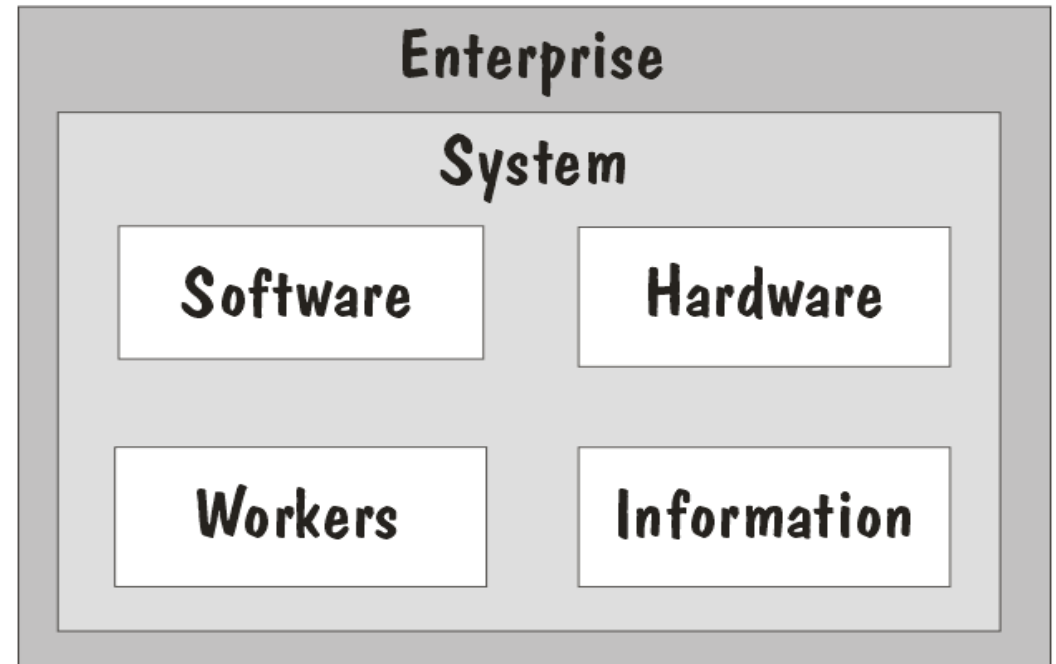
- The end user is concerned with intuitive and correct behavior, performance, reliability, usability, availability and security
- The system administrator is concerned with intuitive behavior, administration and tools to aid monitoring
- The marketer is concerned with competitive features, time to market, positioning with other products, and cost
- The customer is concerned with cost, stability and schedule
- The developer is concerned with clear requirements, and a simple and consistent design approach
- The project manager is concerned with predictability in project tracking, schedule, productive use of resources and cost
- The maintainer is concerned with a comprehensible, consistent and documented design approach, and the ease with which modifications can be made

# You apply these practices when you architect ...

1. You focus on the architecturally-significant elements
2. You consider multiple viewpoints and perspectives
3. You meet the needs of stakeholders
4. You focus on a particular scope



Qui Gon Jinn  
Episode I - The Phantom Menace



## You apply these practices when you architect ...

1. You focus on the architecturally-significant elements
2. You consider multiple viewpoints and perspectives
3. You meet the needs of stakeholders
4. You focus on a particular scope
5. You make decisions based on rationale and tradeoffs

*“The life of a software architect is a long and rapid succession of suboptimal design decisions taken partly in the dark.”*

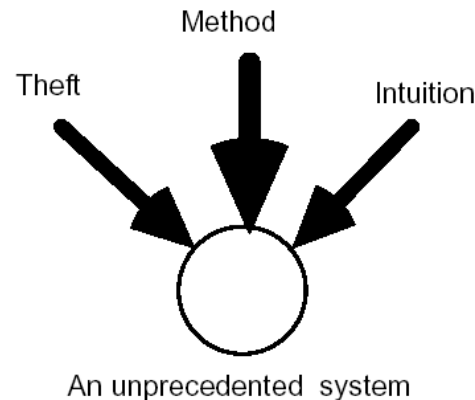
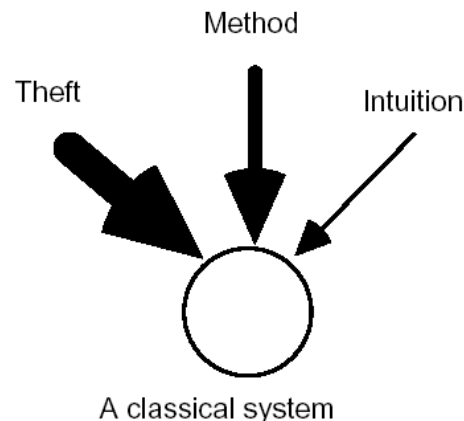
- Philippe Kruchten



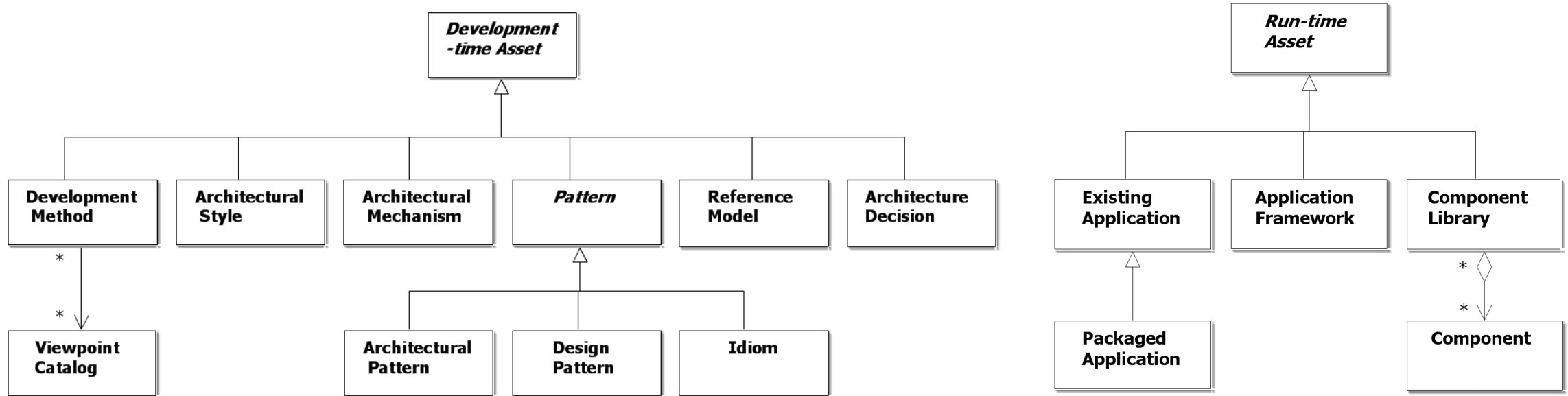
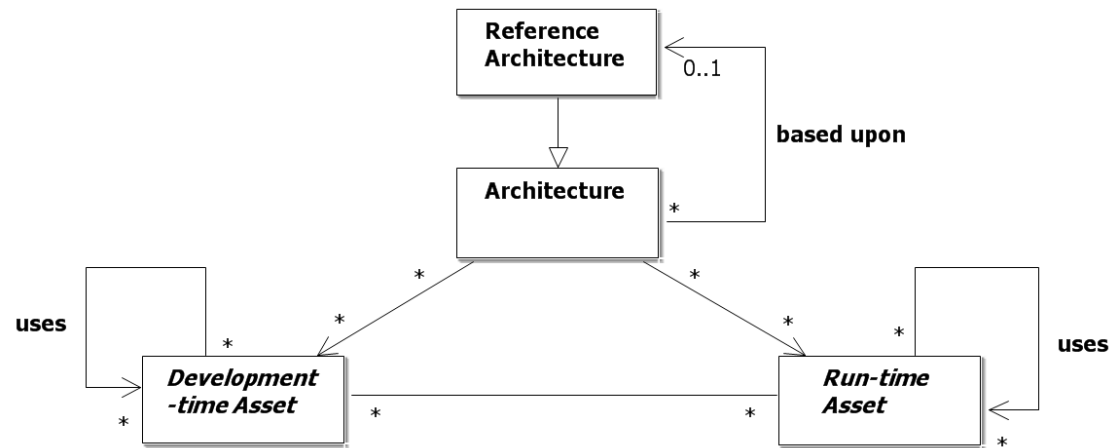


# You apply these practices when you architect ...

1. You focus on the architecturally-significant elements
2. You consider multiple viewpoints and perspectives
3. You meet the needs of stakeholders
4. You focus on a particular scope
5. You make decisions based on rationale and tradeoffs
6. Your solutions conform to an architectural style
7. You use and create reusable assets and knowledge



# You apply these practices when you architect ...



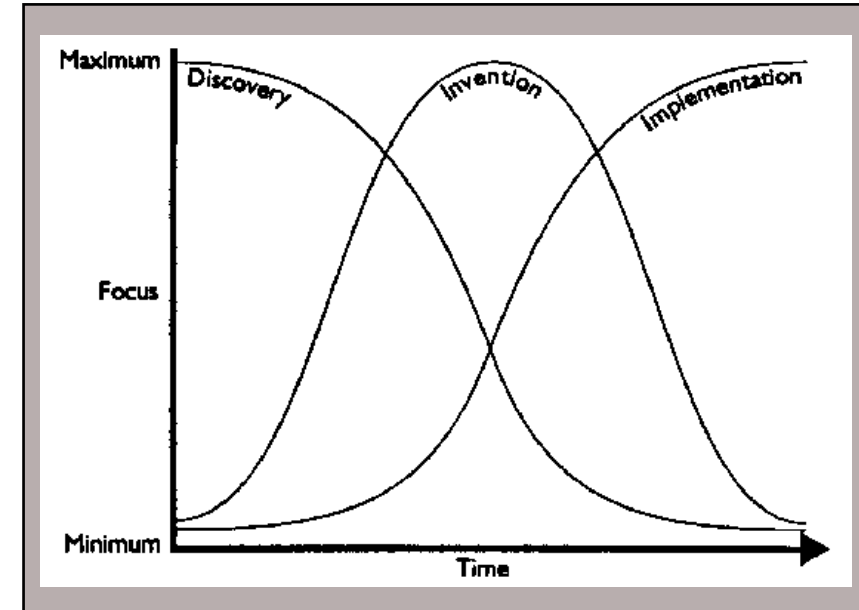
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6. Your solutions conform to an architectural style
7. You use and create reusable assets and knowledge
8. You recognise the influence of the environment



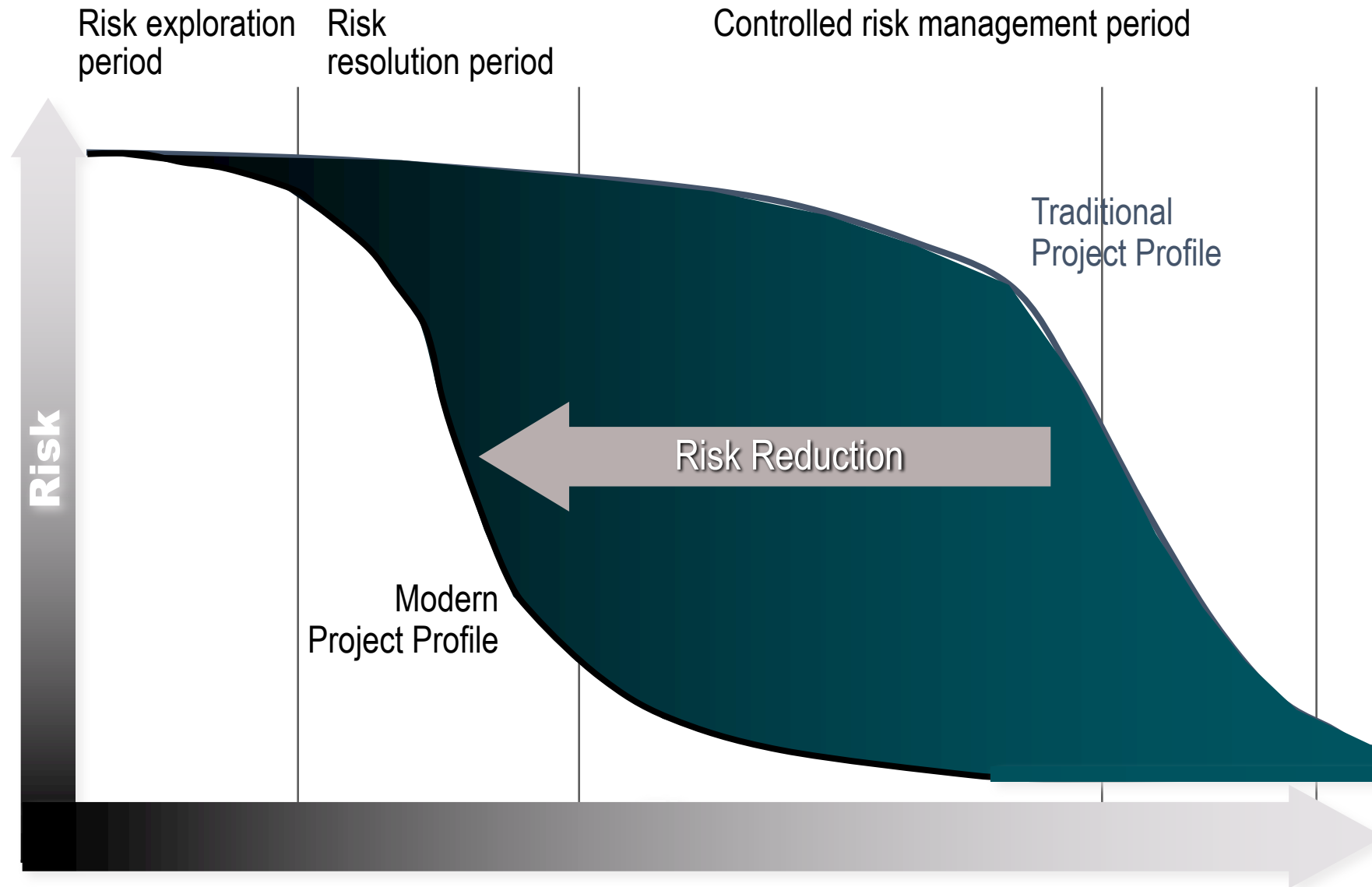
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4. You focus on a particular scope
5. You make decisions based on rationale and tradeoffs
6. Your solutions conform to an architectural style
7. You use and create reusable assets and knowledge
8. You recognise the influence of the environment
9. Your emphasis changes over time





# Your Emphasis Changes Over Time



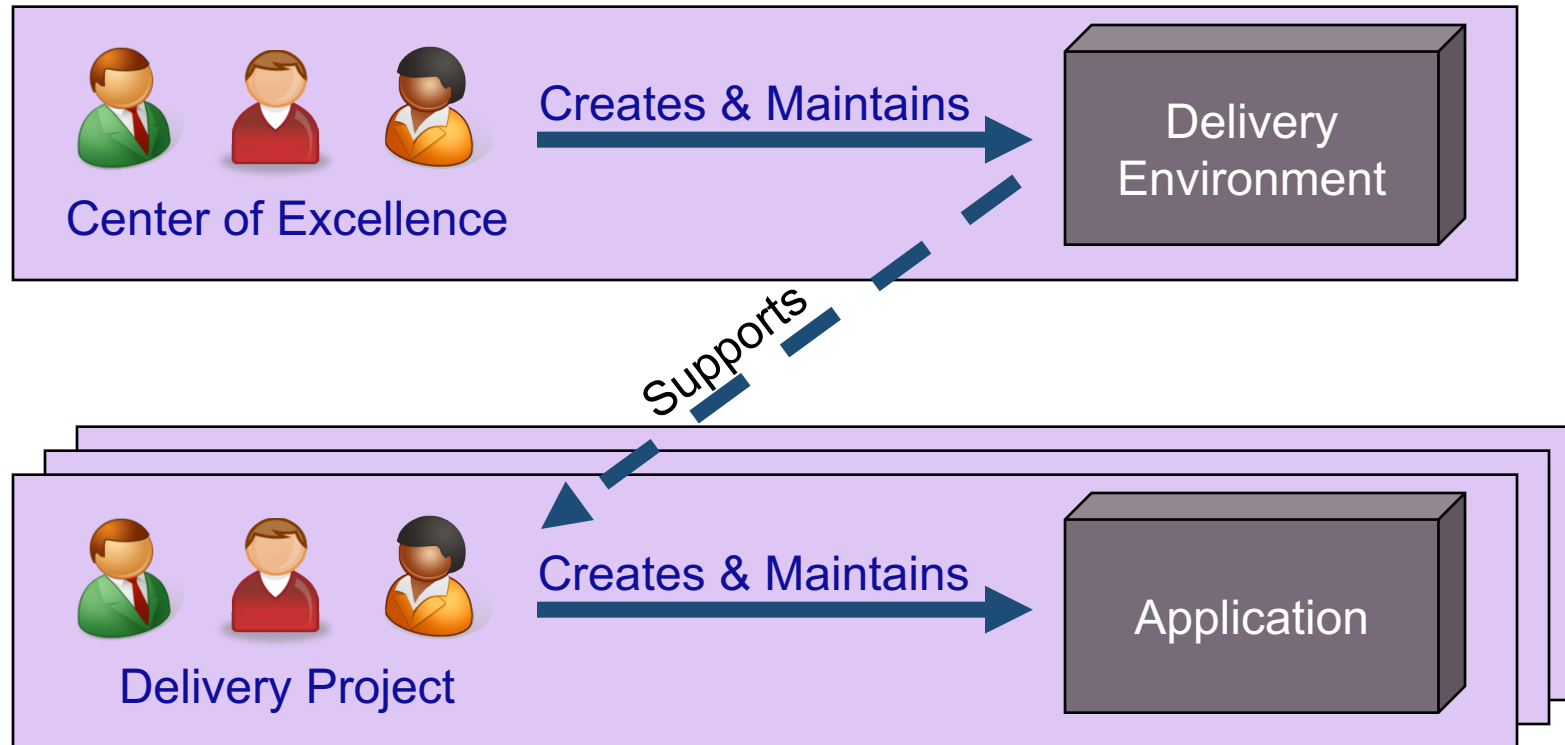
## You apply these practices when you architect ...

1. You focus on the architecturally-significant elements
2. You consider multiple viewpoints and perspectives
3. You meet the needs of stakeholders
4. You focus on a particular scope
5. You make decisions based on rationale and tradeoffs
6. Your solutions conform to an architectural style
7. You use and create reusable assets and knowledge
8. You recognise the influence of the environment
9. Your emphasis changes over time
10. You are involved in all delivery disciplines

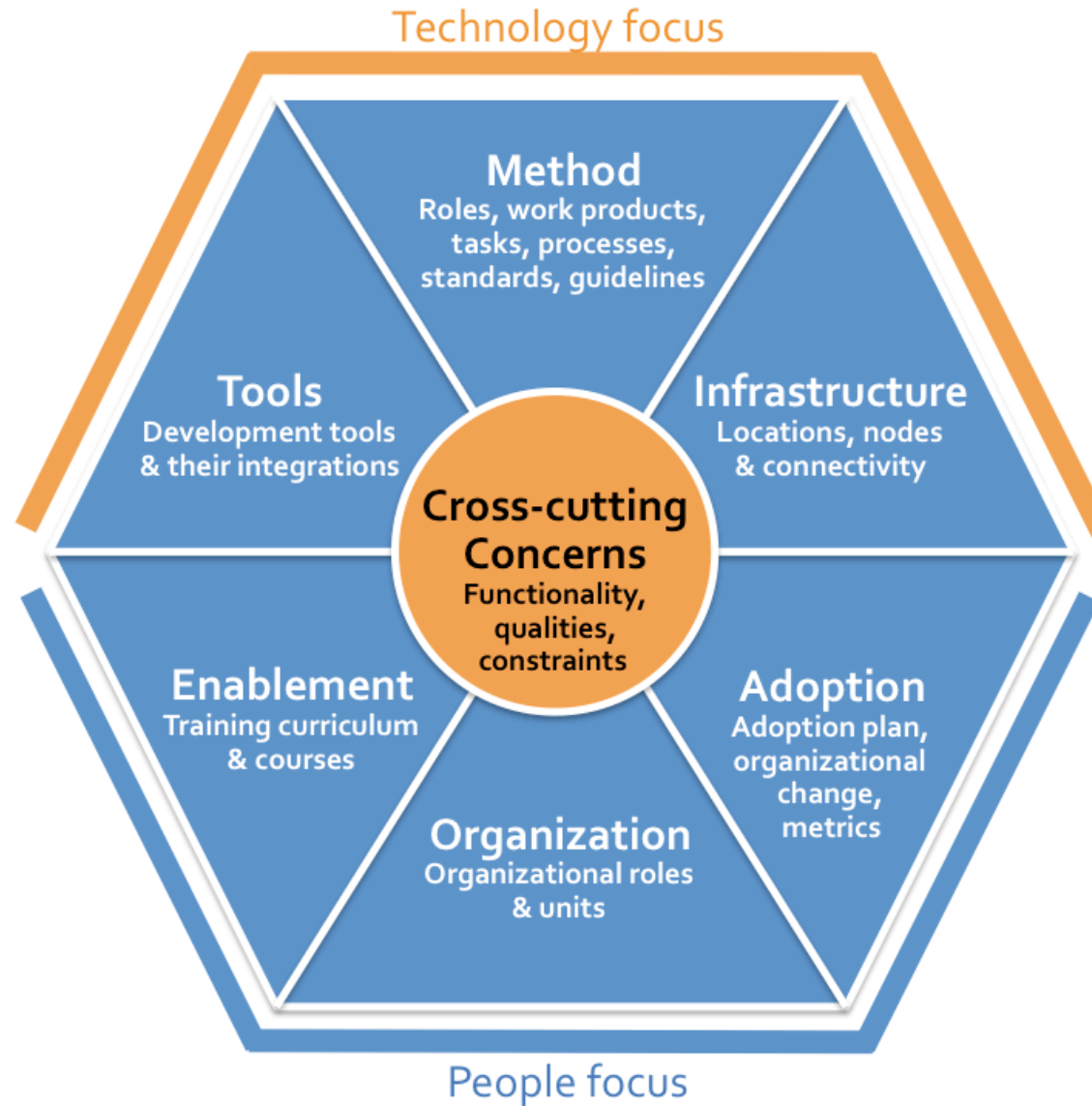
# How to Architect ...

## A Delivery Environment

# The Context for a Delivery Environment

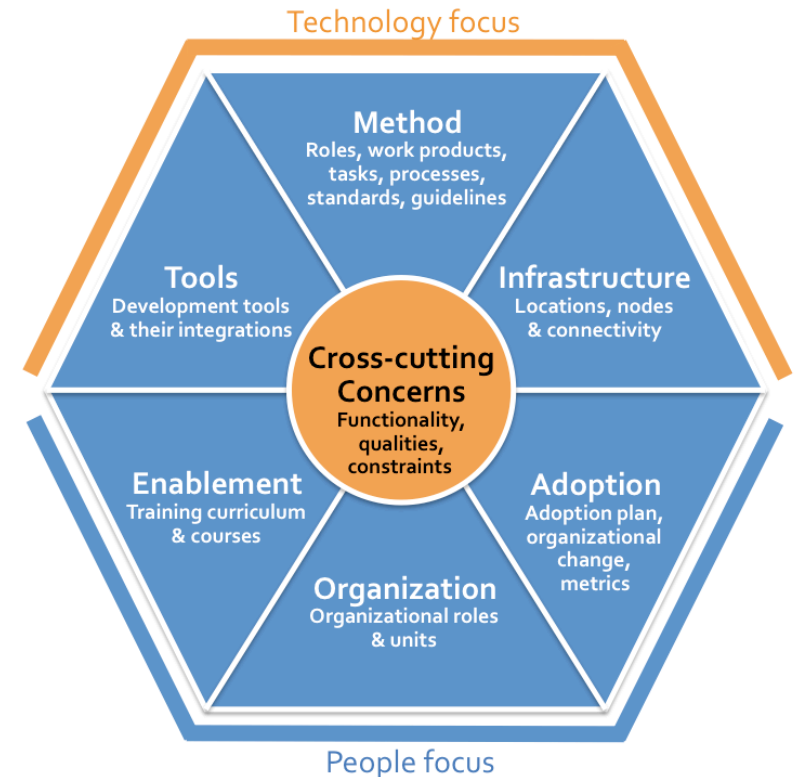


# You consider multiple viewpoints and perspectives



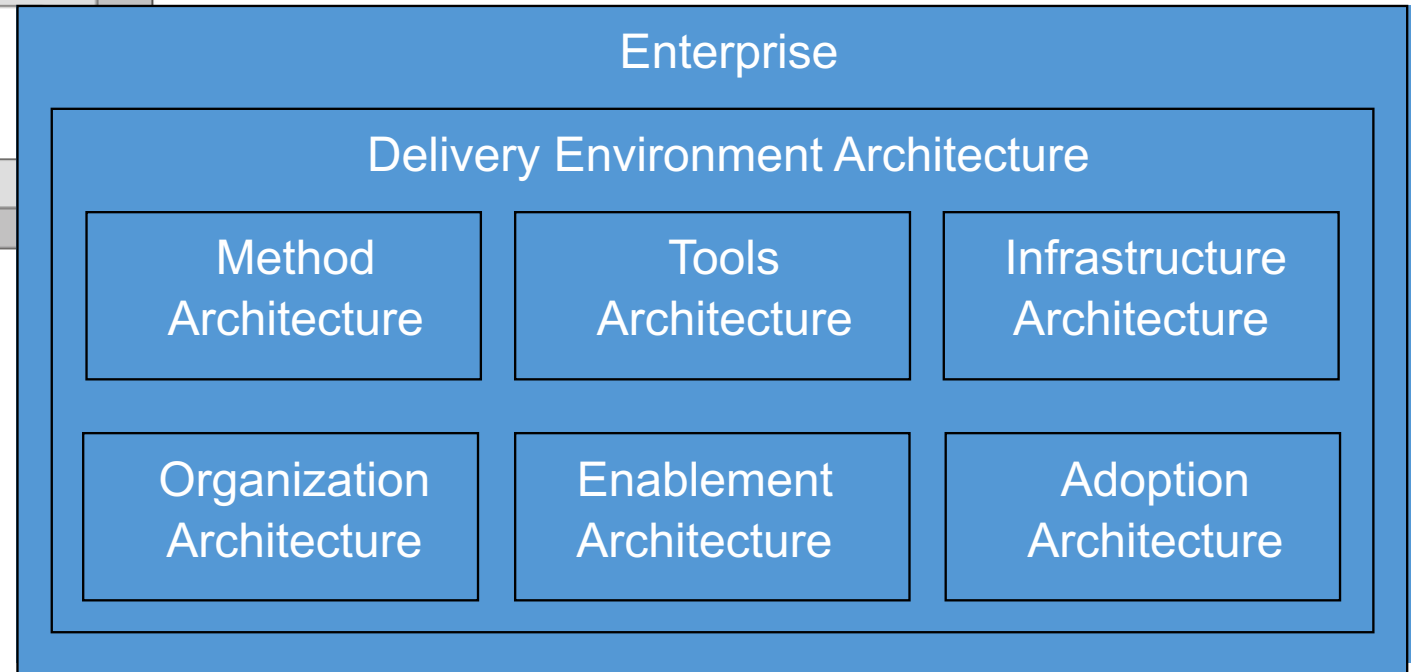
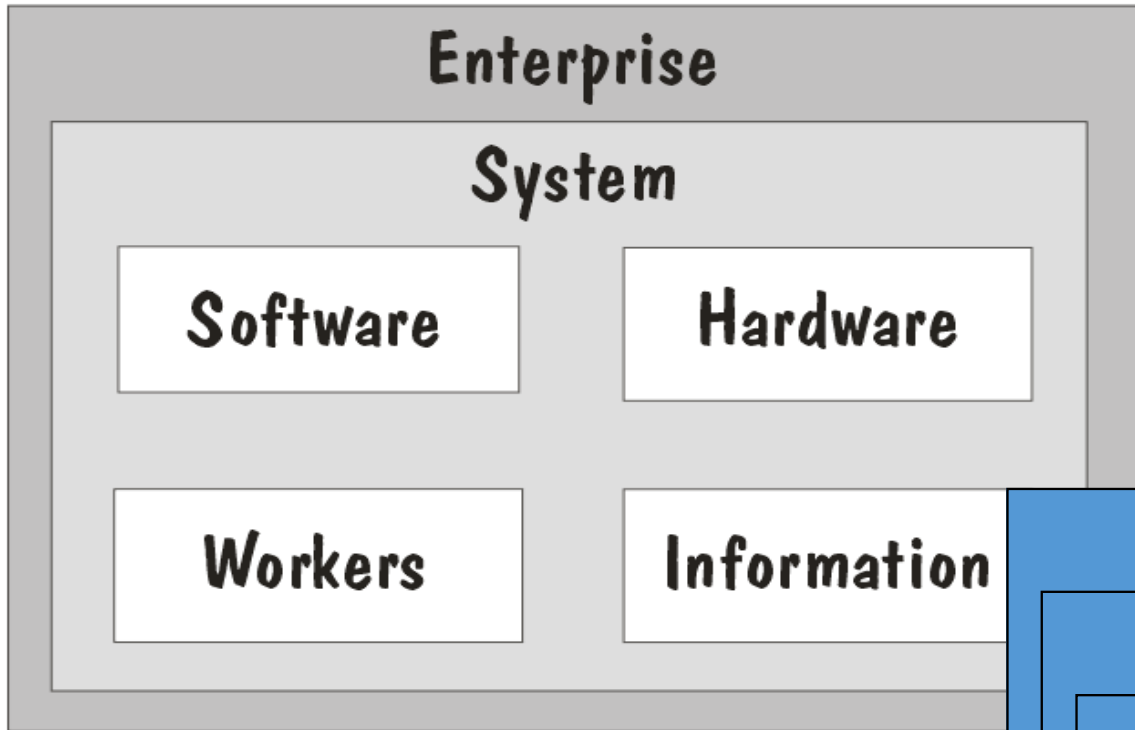
# An Architecture is concerned with Significant Elements

- Method Roles & responsibilities, work products, governance policies
- Tools Selection, integrations, licensing
- Infrastructure Distribution, development environment packaging
- Organization Roles and responsibilities
- Enablement Curriculum
- Adoption Key metrics





You focus on a particular scope



# You meet the needs of stakeholders

- Practitioner Intuitive and correct behavior, performance, reliability, usability, availability, security
- System administrator Intuitive behavior, administration, tools to aid monitoring
- Customer Cost, return on investment, stability, schedule
- Implementers Clear requirements, simple and consistent design approach
- Maintainer Comprehensible, consistent and documented design approach, ease with which modifications can be made
- Sponsor Alignment of anticipated results with business and IT strategy
- Strategic suppliers Providing tools, training, infrastructure and second or third line support



# You recognise the influence of the environment

- Method Regulatory / organizational standards
- Tools Existing “standard” tooling
- Infrastructure Existing infrastructure
- Organization Existing skills, organizational structures
- Enablement An existing training curriculum
- Adoption Approach to on-boarding teams on projects



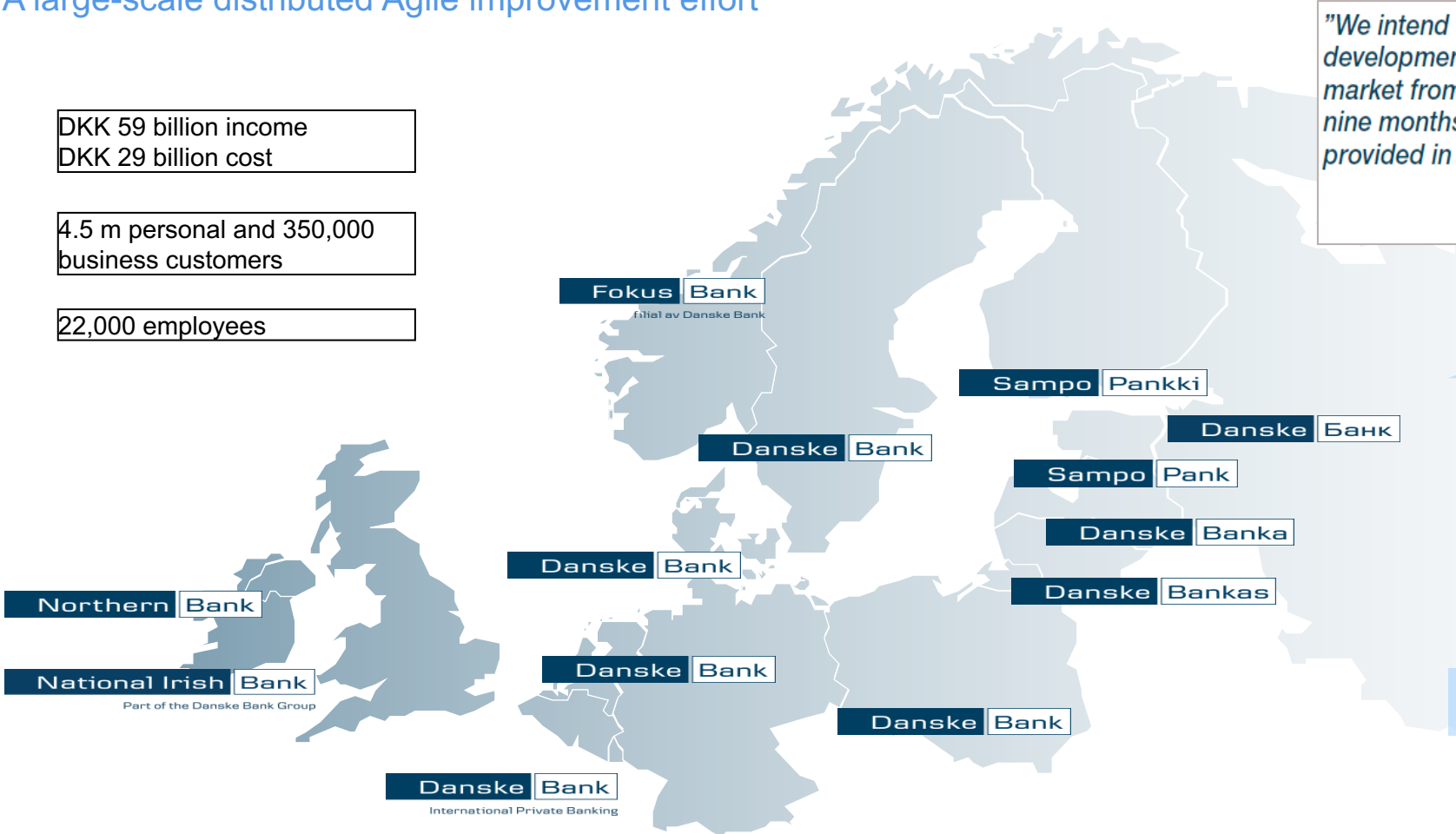
# Case Study: Danske Bank

A large-scale distributed Agile improvement effort

DKK 59 billion income  
DKK 29 billion cost

4.5 m personal and 350,000  
business customers

22,000 employees



*"We intend to enhance the efficiency of our IT development process by 10% and reduce the time to market from approximately 14 months to an average of nine months. The first business deliveries will even be provided in the course of just four months."*

PETER RASMUSSEN, SENIOR VICE PRESIDENT  
IT DEVELOPMENT PROCESSES & TOOLS, DANSKE BANK.



## How Agile at Danske Bank helps deliver their improvement strategy

Scope	Projects (50%) System management areas (90%)
Flexible development model & organisation	Adding another lifecycle, providing approach for system management
Efficiency	Productivity increase 10%
Time-to-market	Produce potentially shippable products after each increment
Quality	Frequent user and acceptance test
Customer and employee satisfaction	Ability to change scope and plans, motivated development team

Danske Bank IT Group

2000+ developers

6 business units

Global SW Dev Teams (20% India and increasing)

# Q & A

Thank you