



**The architect: artist, technician or manager?
– some personal observations**

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Overview

- The architect
- “Good things come in threes”
- Other key qualities
- Some architectural principles
- Art and science
- So, what’s it to be?

“If I have seen further than others, it is because I was standing on the shoulders of giants.”

– Sir Isaac Newton, 1676

The architect – some definitions

architect /'a:ki,tekt/ n. 1 a designer who prepares plans for buildings, ships, etc., and supervises their construction. 2 (foll. by of) a person who brings about a specified thing (the architect of his own fortune)

– Oxford English Reference Dictionary

“An architect (literally “chief builder”) ... the person who makes strategic decisions before construction is commenced”

– Louis Hellman, Architecture A-Z

The architect – an observation

“Ever since professional architects came into being in the eighteenth century ... their ideology and training have emphasised individualism and artistic ability to the detriment of organisational and cooperative talents, comprehension of building technique and social responsibility. As a result, architects are frequently regarded both by the public and by others within their industry as impractical idealists”

– Andrew Saint, *The Image of the Architect*

The architect

Vision

- “Start with the end in mind”
- Cutting stone vs. building a cathedral

Bridge between user and construction

- Business and technical understanding

Delivery

- Implemented – the only outcome of any value!

“Good things come in threes”

- Artist (“designer”)
- Technician (“engineer”)
- Manager

Artist (“designer”)

“Capturing and articulating the vision”

Ability to see

- “The big picture”
- Patterns and relationships
- Opportunities and options

Produce a design which reflects needs and context

- Simplicity – reducing complexity
- Realistic – technically and commercially “realisable”

“An artist can paint square wheels but an architect must make them round”

– Paul Klee

Technician (“engineer”)

“Building the vision”

Must have a practical understanding of the underlying tools and techniques

- Business and technology driven
- Best practice

Domain knowledge

Reducing risk and complexity

Need to avoid “over-engineering”

- Predicting the future

Manager

“Implementing the vision”

Coordination and cooperation

- Often without any associated authority and control

Organisational and political skills

- The productive use of the informal organisation
- *“If the politics doesn’t fly, the system will never fly”*
- Eberhardt Rechtin

Role of a “Project Manager” in most projects

Need to avoid over-planning

- Plan to a level below which people clearly know what they need to do

Other key qualities

- **Creativity**
- **Communication**
- **Team player**
- **Skills and experience**

Creativity

- Open-minded
- Bend the rules – where they exist!
- Reuse and improve

Communication

- Ability to listen
- Requirements “dialogue”
- Negotiation and consensus
- “Selling” the outcome and approach
- Know your stakeholders

Team player

- **“Lone rangers” rarely succeed – need to avoid the development of “ivory tower” architectures**
- **Need to work effectively with a wide range of people**
- **Consult others**
- **Seek active participation**
- **Everyone needs to succeed for the team to succeed**

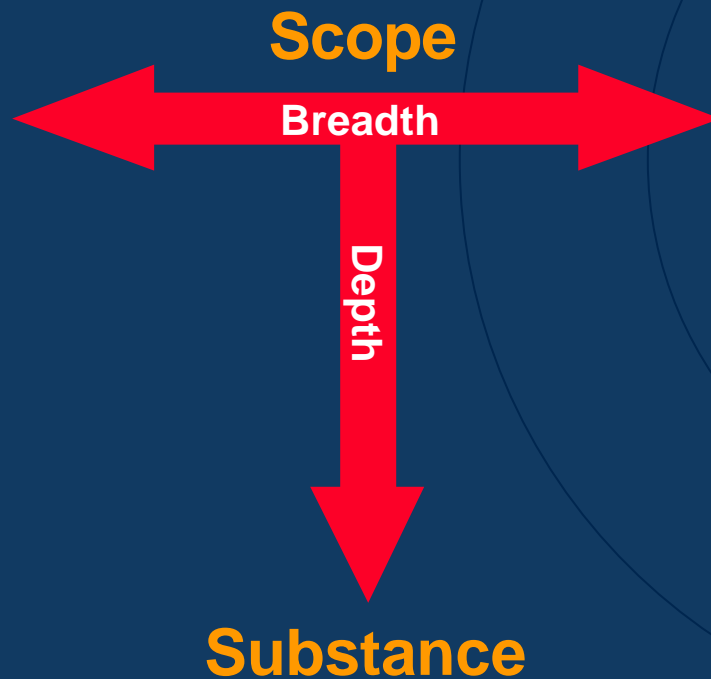
Team player (continued)

- Leadership vs. control

“The only real definition of a leader is someone who has followers”

– Peter Drucker

Skills and experience



A good architect must have a combination of both breadth and depth

- Technical
- Commercial

The “knowing-doing” gap

- Theory vs. practice
- Generalist vs. specialist

Experience across the lifecycle

“The devil is in the detail”

Some architectural principles

- **People come first!**
- **Provide a context**
- **Understand the requirements**
- **Reduce complexity**
- **The three conditions**
- **Some other “threebies”**
- **“Fashion passes, style remains”**

People come first!



Understand the requirements

Manage expectations

- “Free, perfect and now”
- Quick wins vs. long-term gains
- Interested in the ends rather than the means (eg. water vs. plumbing)

Sell the vision

- Strategy

Obtain “buy-in”

- Management support

Provide a context

No system exists in isolation – either from its users or from other systems or associated business processes

“The first law of ecology is that everything is related to everything else”

– Barry Commoner

Provide a context (continued)

A good architecture helps to avoid the delivery of individual solutions each with their own mix of technical and commercial issues

- “Holistic” vs. “piecemeal”
- Direction for the redevelopment of existing systems
- Benchmark for the delivery of new systems
- Maximises value
 - Improve productivity
 - Reduce duplication
- Ensures a common vision

Understand the requirements

*“I keep six honest serving-men
(they taught me all I knew):
their names are What and Why and When
and How and Where and Who”*

– Rudyard Kipling

Why

- Motivation

How

- Process / function

Who

- People

Where

- Place / network

What

- Data

When

- Time

Understand the requirements (continued)

“Yes, that’s what I asked but it’s not what I wanted”

- Very rarely do we ever start with a complete and unambiguous set of requirements

Commercial

Functional

Non-functional

- Usability
- Reliability
- Performance
- Support

Understand the requirements (continued)

Architectural

- Design
- Implementation

“Your architecture must be based on requirements otherwise you are hacking”

– Scott Ambler

Reduce complexity

$$\text{Complexity} = \text{Diversity} \times \text{Scope}$$

Diversity

Number of different:

- vendors
- hardware
- software, and
- standards used.

Scope

Number of:

- users, and
- associated service level requirements.

The “three conditions”

*“In architecture ...
the end must direct the Operation.
The end is to build well.
Well-building hath three conditions:
Commoditie, Firmeness, and Delight.”*

– Sir Henry Wotton, 1642

Functionality - Durability - Usability

The “three conditions” (continued)

Good architecture is a combination of all three

- **Functionality** – “fit for purpose”
- **Durability** – “grow old gracefully”
- **Usability** – “presentation and ease of use”

“A well-planned building can be ugly just as a beautiful building can function poorly. Form does not, contrary to Louis Sullivan’s hoary maxim, follow function.”

– Witold Rybczynski

Some other “threebies”

Business responsibility:

- Architecture
- Requirements
- Testing

System operation:

- Availability
- Stability (consistency)
- Performance

Some other “threebies”

Web design:

- Presentation
- Structure
- Behaviour

“Fashion passes, style remains”

Fads come and go – but the core principles remain

- Need to focus on these principles

Likewise, there is no “right answer” or no “only way”

- One size does not necessarily fit all

Art and science

Two evolving “schools of thought” which have parallels to architectural movements:

- “Arts and craft”
- “Functionalism”

Reflect different approaches to common issues within the industry

Art without science – superficial

Science without art – sterile

“Arts and craft”

“Movement which sought to revive the ideal of craftsmanship in an age of increasing mechanisation and mass production”

Sees software development primarily as a craft

Strong emphasis on aesthetics – customisation

Focuses on the capabilities of the developer and associated techniques

Driven out of smaller teams with shared roles and responsibilities

Apprentice ⇨ Journeyman ⇨ Master

“Functionalism”

“Architecture reduced to its necessary functional elements so as to enable production”

Sees software development primarily as an engineering discipline – “software engineering”

Strong emphasis on “rational and “scientific” design – standardisation

Focuses on process and supporting tools

Move towards “industrial” production

- Model-driven architecture

Driven out of large-scale software development projects and initiatives

So, what's it to be?

A good architect:

- Understands the requirements and broader context
- Develops a solution (“shared vision”) which addresses these and the relationships between them, and
- Assists with its successful delivery

or

- Vision (concept or idea) – “**Artist**”
- Process (construction) – “**Technician**”
- Outcomes (results) – “**Manager**”

Thanks and acknowledgements

- **OPEN Process Framework**
 - <http://www.donald-firesmith.com/master.html>
- **The Rational Edge**
 - <http://www.therationaledge.com>
- **The Zachman Framework**
 - <http://www.zifa.com>

Finally, today's presentation was also brought to you by the letter "A" and the number "3"!