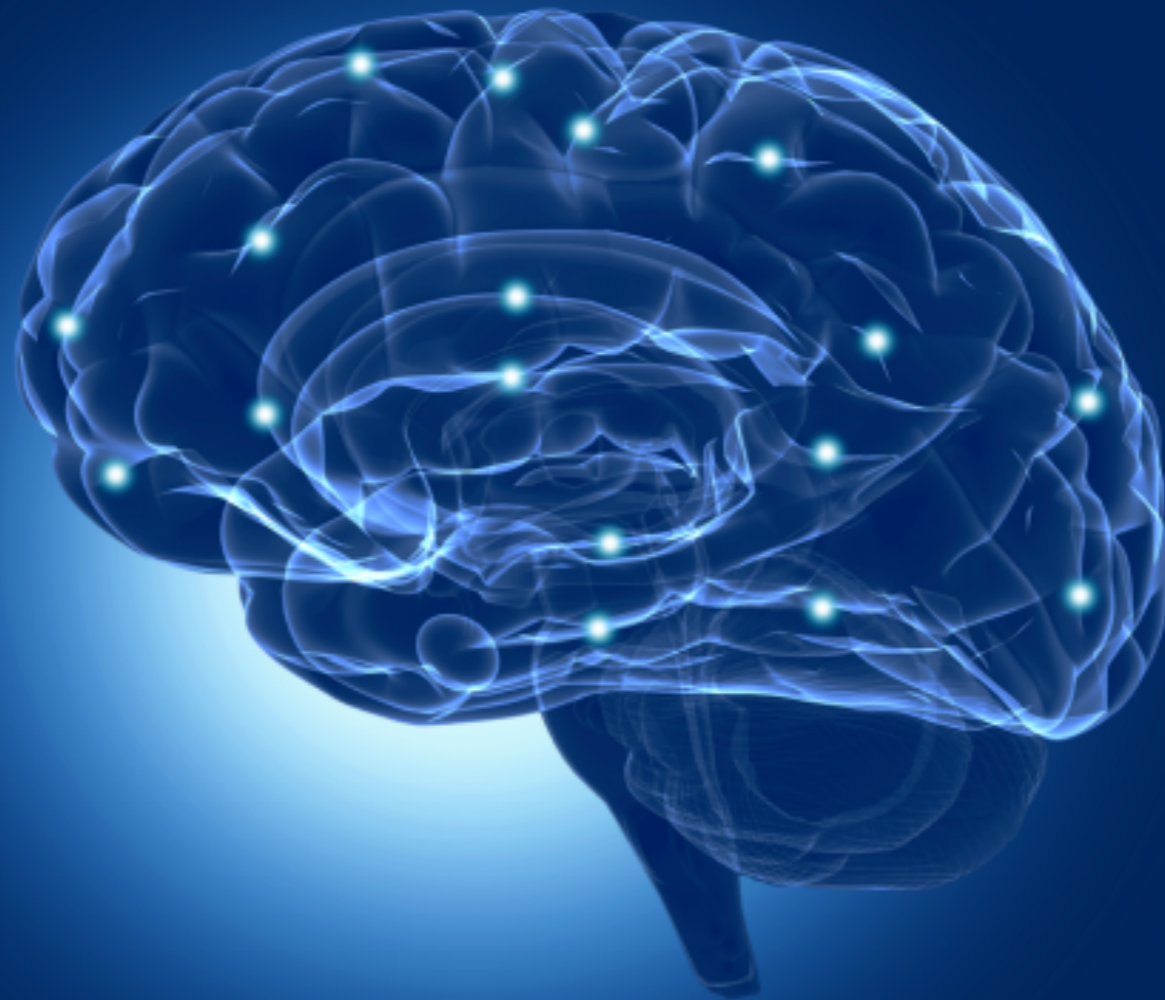


The role of the software architect in successful projects



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Why software projects **fail**...

...architects are here
to help, not to hinder

Software projects fail
for a number of reasons

Iterative and agile techniques
solve *some* problems....

...but **not all** of them

Software architects

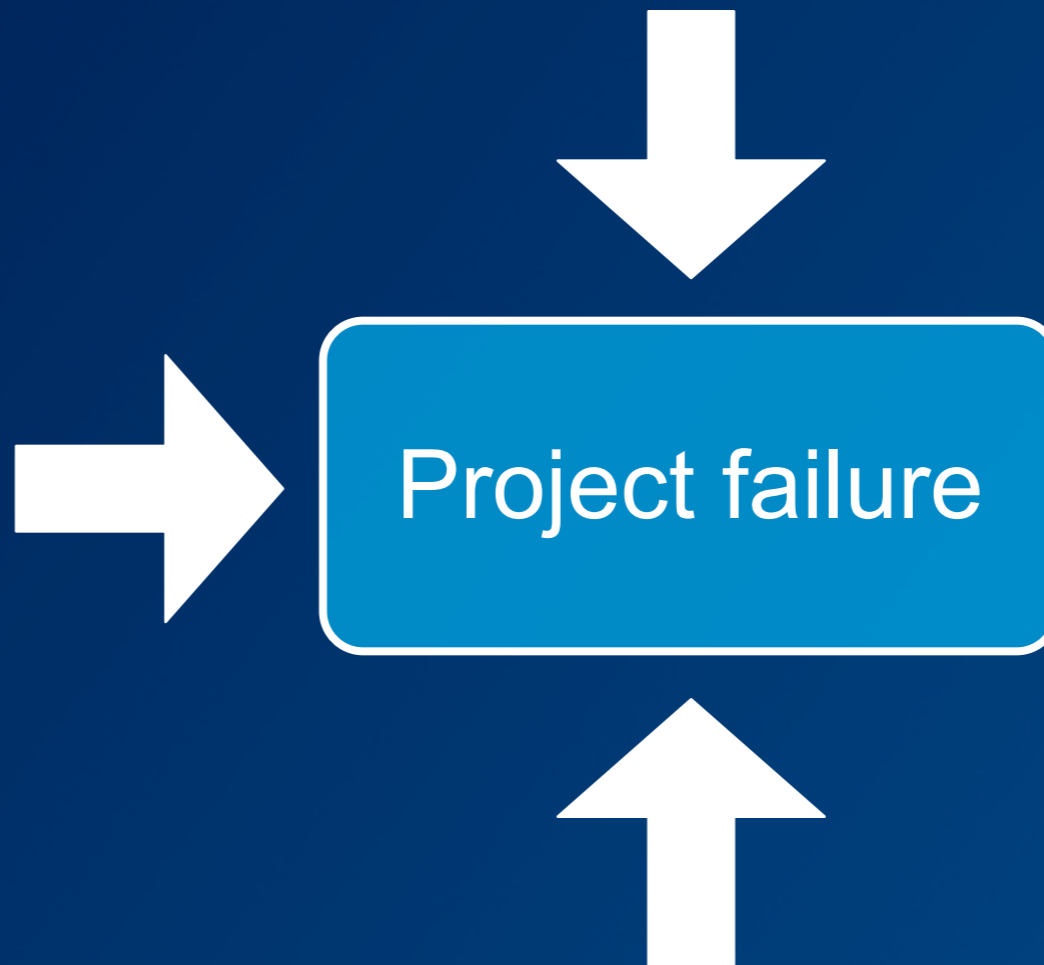
have a

bad reputation

(“thinkers”)

“we don’t need an architect,
we have smart developers”
(we only hire the best)

“you **must**
follow what our
central
architecture
team
dictates”
(the ones in the ivory tower)



“let’s get an architect in for the
first few weeks”
(they are too expensive and they don’t code)

Time for change



1. Management of the non-functional requirements

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“it should be
fast”



Stakeholder

“
the main flow of the
search use case
should respond within
10 seconds,
for
all concurrent users”

- Performance
- Scalability
- Availability
- Security
- Disaster Recovery
- Accessibility
- Monitoring
- Management
- Auditability
- ...

Runtime

- Flexibility
- Extensibility
- Maintainability
- Interoperability
- Legal
- Regulatory
- Compliance
- i18n
- L10n
- ...

Non-runtime

Somebody needs
to take
ownership

It should be the
architect



2. Architecture definition

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Every system *has* an
architecture, but not every
architecture is
defined

Just enough

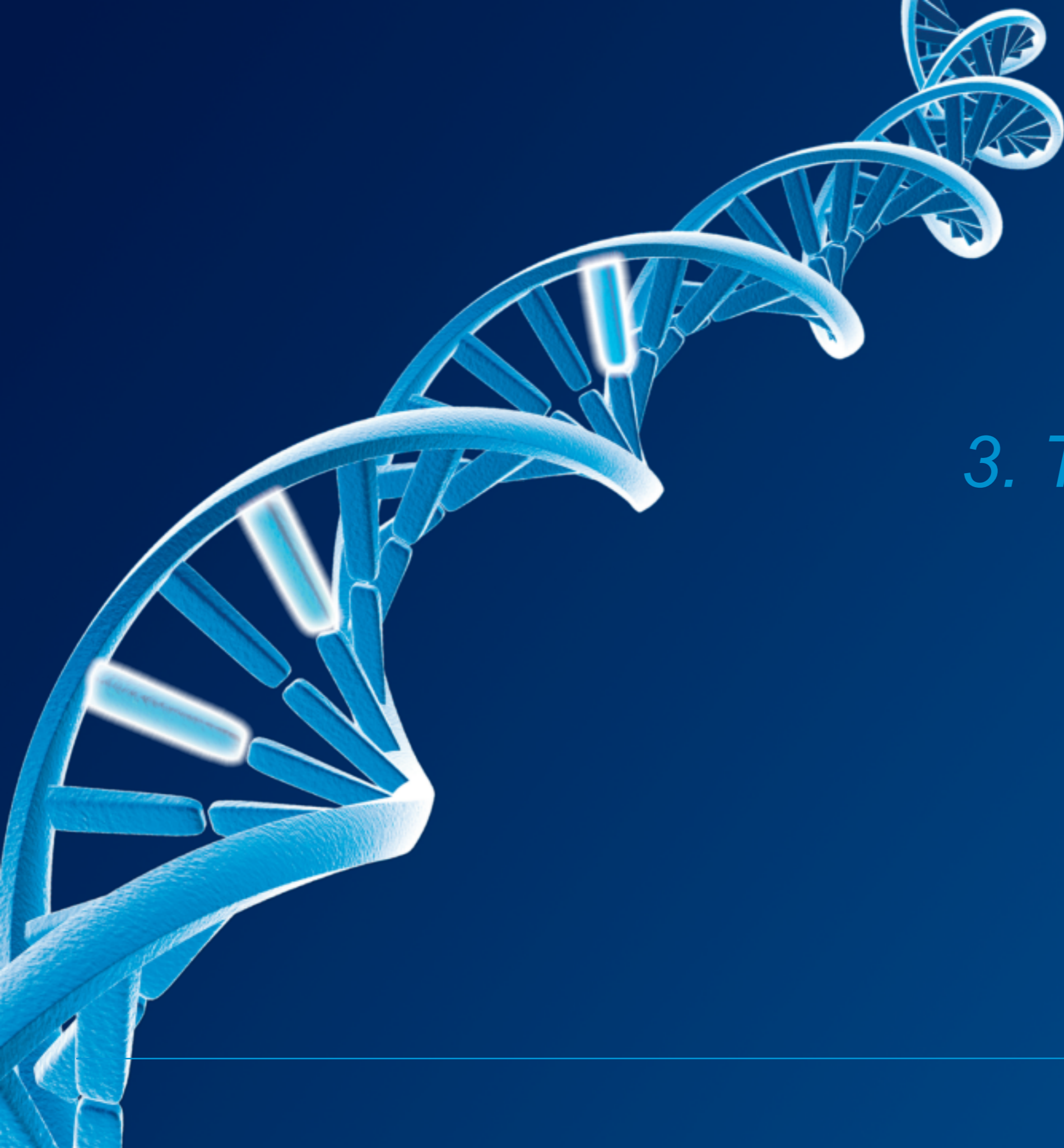
(pragmatic rather than
big design up front)

Architecture definition introduces
structure, guidelines
and **leadership**

Somebody needs to
take **ownership**

It should be the
architect

(to be fair, defining the architecture **is** our job)



3. Technology selection

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Do you believe
vendor hype?

“does it actually
work?
show me.”



Technology selection
is about
managing risk

Somebody needs
to take
ownership

It should be the architect

(if we recommend some technology,
we better make sure it works!)



4. Architecture evaluation

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Does your architecture work?

(and what does “work” mean?)

Do you **trust yourself?**
(I don't)

Testing provides
confidence

I want to **prove** my
architecture will work

(management generally give me
less grief when I do this)

Performance and scalability tests

(automated if possible)

Somebody needs to
take **ownership**

It should be the
architect

(we should taste our architecture)



*5. Architecture
collaboration*

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The **team** needs to
understand the
architecture

Architectures

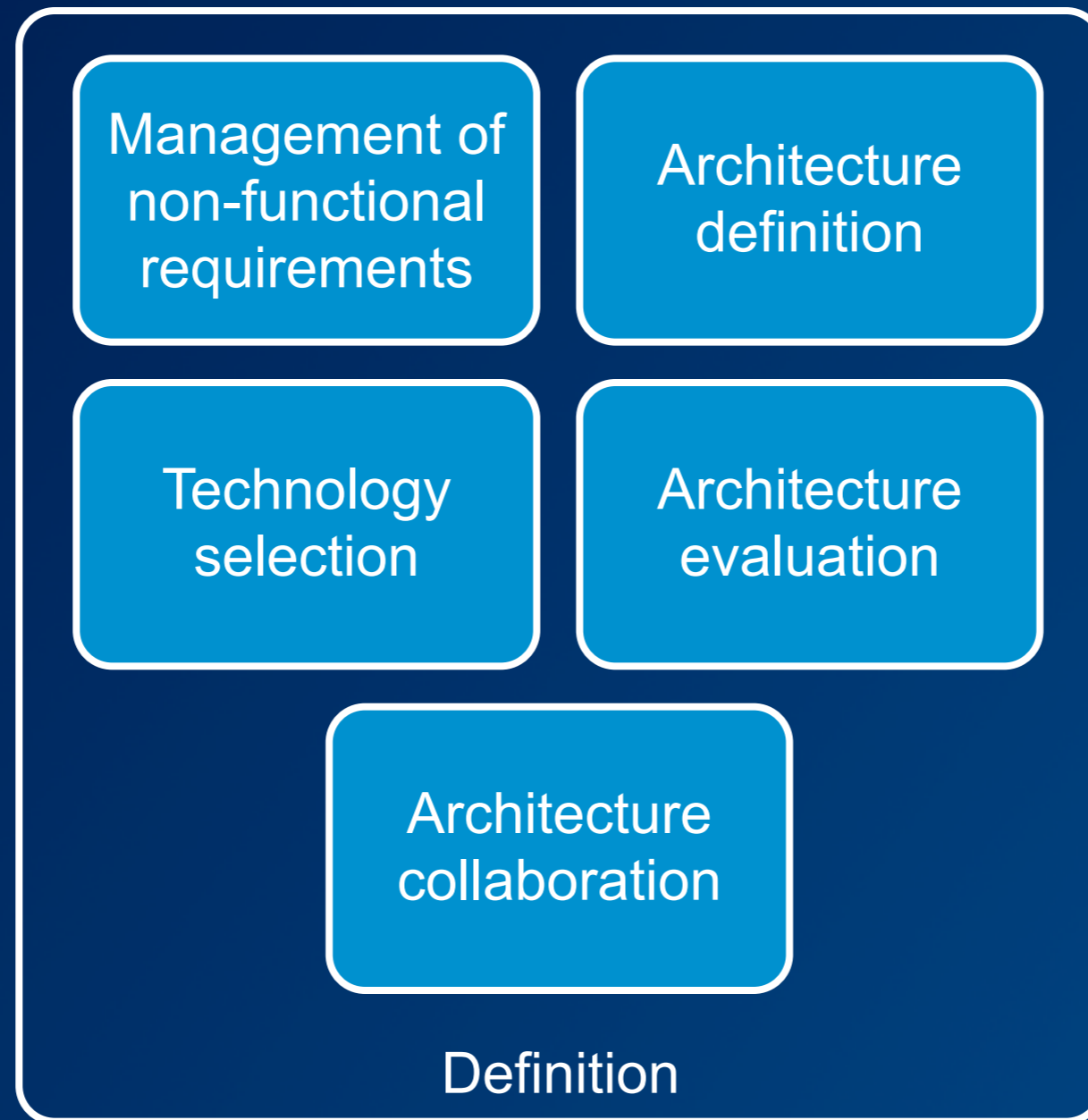
don't live in

isolation

Somebody needs to
take **ownership**

It should be the
architect

(our architecture needs to integrate)





*6. Ownership of the
bigger picture*

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Software development
is not a
relay sport

“how do you **know**
that your solution
will **work?**”



“that’s an
implementation
detail”



“Architect”

“we have a
spreadsheet
from past projects”



“Architect”

Look after your
architecture

Architectures evolve

Somebody needs to
take **ownership**

It should be the
architect

(why hand-off *our* architecture?)



7. Leadership

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There's an essay on
the "Coding the
Architecture" website
about this...

Mind the gap

Experience and focus

Focusses only
on the low-level
detail

Focusses only
on the low-level
detail

Focusses only
on the low-level
detail

Focusses only
on the low-level
detail

Focusses only
on the low-level
detail



Developer

Developer

Developer

Developer

Developer



Architect

Sits in an ivory tower and dictates



Focusses only on the low-level detail



Developer

Increased architectural awareness



Developer



Architect

Increased collaboration

Somebody needs to
undertake technical
leadership

(continuously)

It should be the architect

(sounds obvious, but it doesn't always happen
- who's going to steer the boat?)



8. Coaching and mentoring

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Project teams need
leadership and
support

Somebody needs to

coach and

mentor

It could be the
architect

why not share some of our *vast* experience? ;-)



9. Quality assurance

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Quality needs
standards
and **practices**

1. Continuous integration
2. Automated unit testing
3. Code coverage

Source code analysers

Most projects
don't do enough
quality assurance

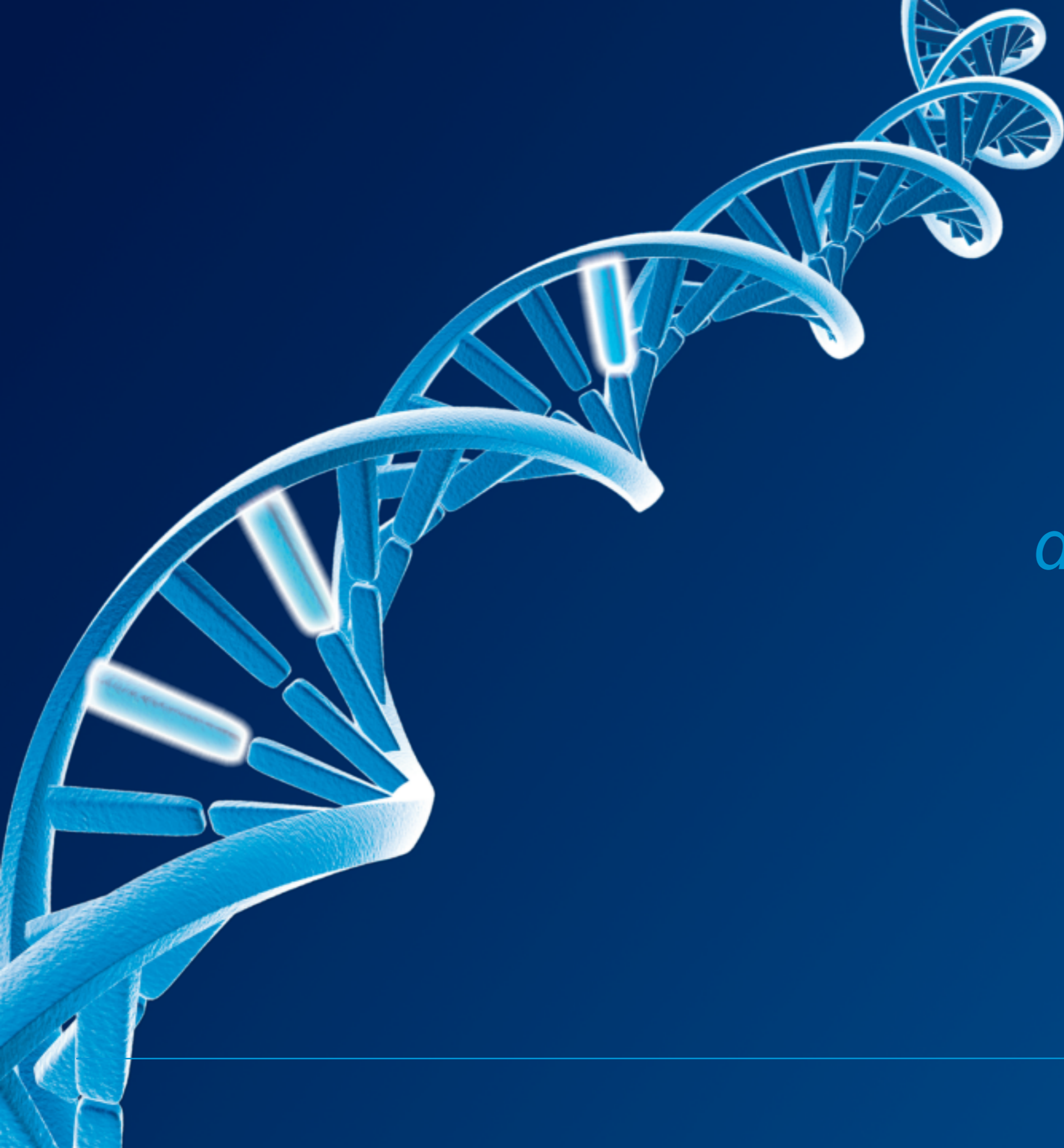
What's
important?

Do
or
delegate

Somebody needs to
assure
quality

It should be the architect

(agile would say differently, but that's
a bit harsh on junior team members)



*10. Design,
development
and testing*

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Hands-on
doesn't necessarily
mean coding

Hands-on means
engaged,
but...

...why *shouldn't* the
architect code?

I enjoy

coding
{the}
architecture



;-)

“Our architects are
too valuable
to code”



Manager

“Does it matter
if your projects
fail?”



the architect can code

(it's not mandatory; project size or
politics may prevent this)





Summary

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Software projects fail for many reasons

(some of which agile doesn't
have the answers for)

Software architects have a
bad reputation
because of the
limited role
we often undertake

Software architecture is **more**
than **choosing technology**
and **defining architecture**

Project success is more
than choosing technology
and defining architecture

Management of non-functional requirements

Architecture definition

Technology selection

Architecture evaluation

Architecture collaboration

Definition

Ownership of the bigger picture

Leadership

Coaching and mentoring

Quality assurance

Design, development and testing

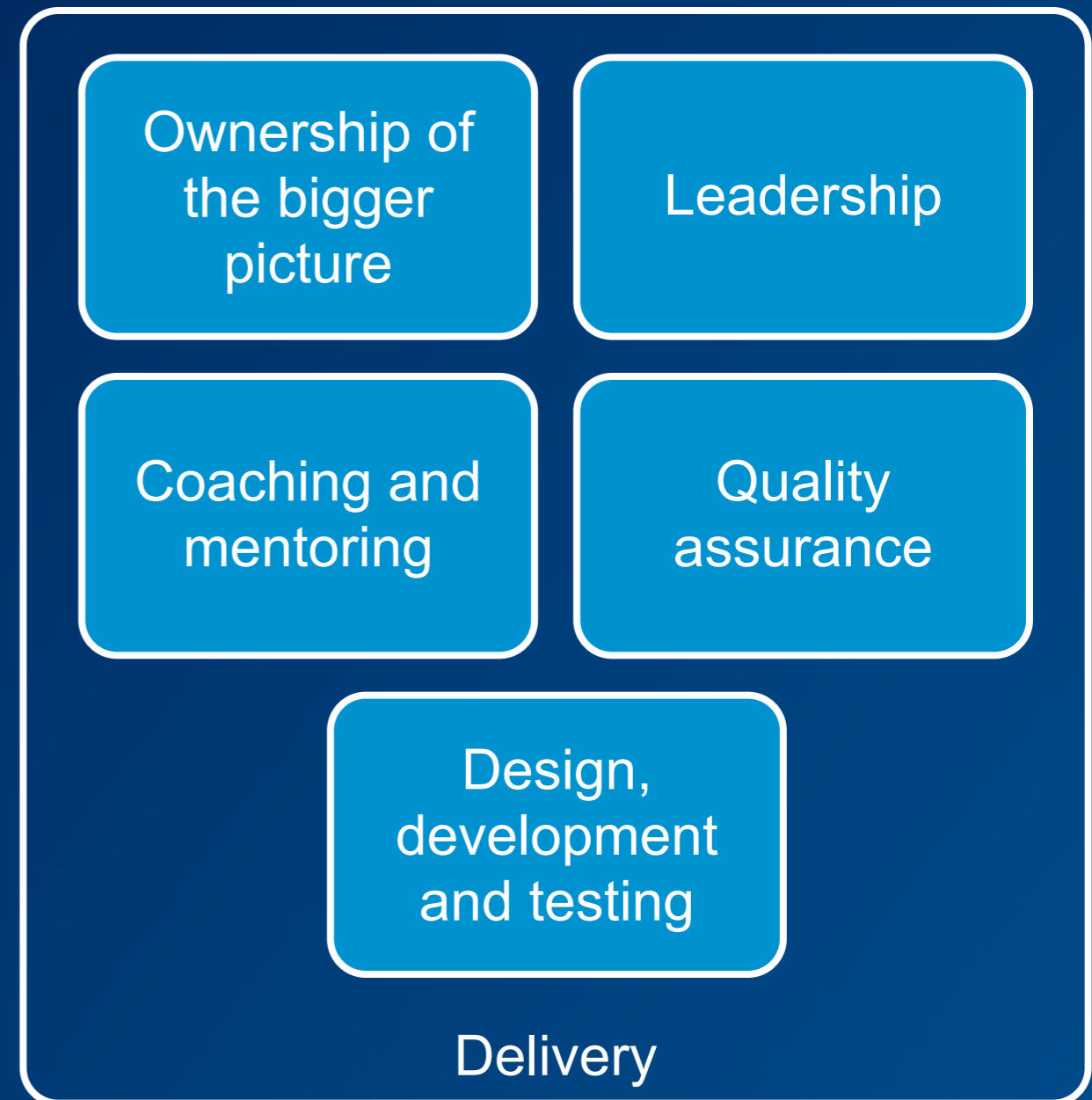
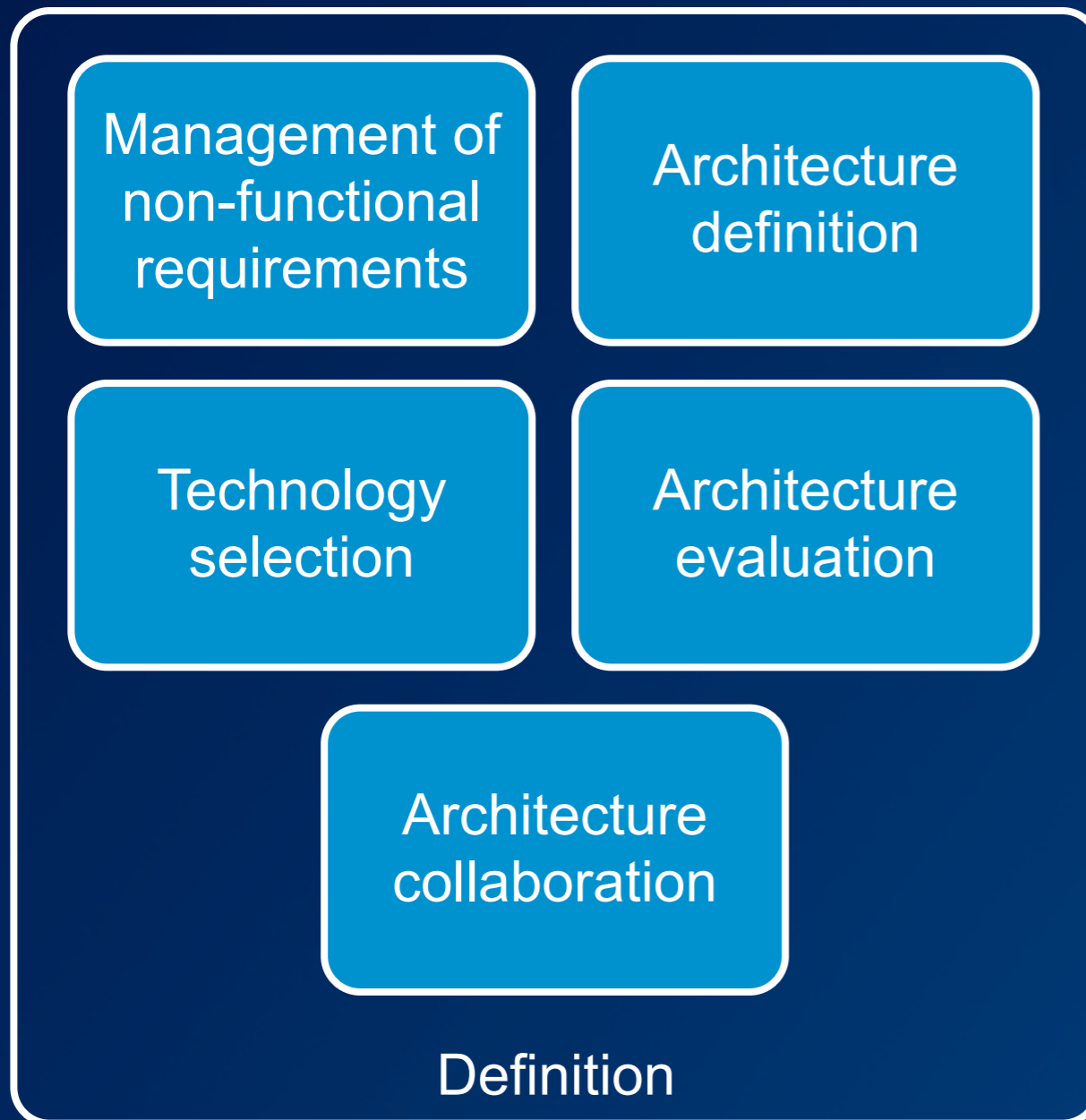
Delivery

Who should do
all of this?

It should be the architect

somebody has to do it and that's why
we get paid the big bucks ;-)

The role of a software architect



A hands-on software
architect can be
invaluable for preventing
project failure

A hands-on software architect

can be invaluable for driving

project success

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