

New Business Models and Digital Platforms in Construction 4.0

Olivier Lepinoy

Global Business Development Executive | Autodesk



Olivier LEPINOY

Olivier Lépinoy belongs to the Autodesk Business Development team for the AEC industry. He is building and developing the conditions for Autodesk to be part of its clients' strategic initiatives.

Olivier is an expert in strategies to help firms pivot and grow new businesses. He took part in multiple digital platform initiatives for the largest firms worldwide. His current focus is on helping firms explore and build New Business Models.

With past experiences in architecture, at VINCI, at Accenture, and at IBM, Olivier has built an unparalleled career path across disciplines and business ecosystems. He is one of the co-authors of an acclaimed book about Construction 4.0: "Construction 4.0, An Innovation Platform for the Built Environment".

Olivier Lépinoy holds two Master's Degrees: in Civil Engineering (Ecole Spéciale des Travaux Publics, Paris) and in Earthquake Engineering (UCLA, USA). He is also a licensed architect and an urban designer (Ecole d'Architecture de Versailles).



an

INVISIBLE

revolution

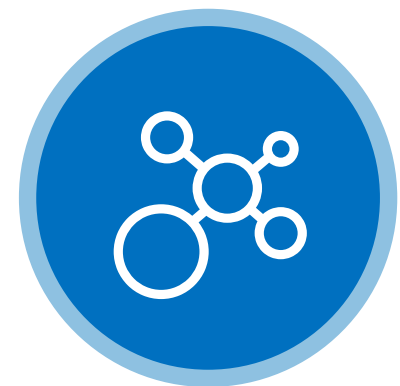
HERE IS WHAT I THINK



The Nature of Innovation changed



The Nature of Disruption is changing

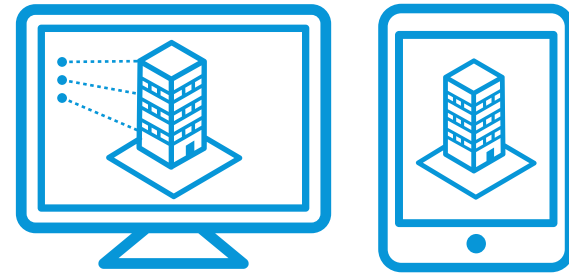


AEC already entered the Platform Economy

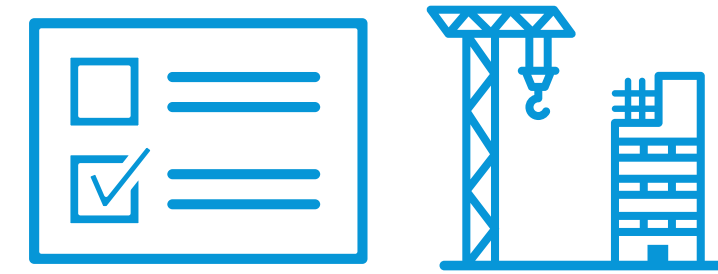


Culture is at the centre of this Transformation

Let's look below the surface, at what is **invisible**



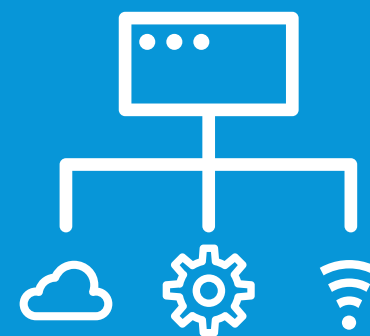
Digital
Solutions



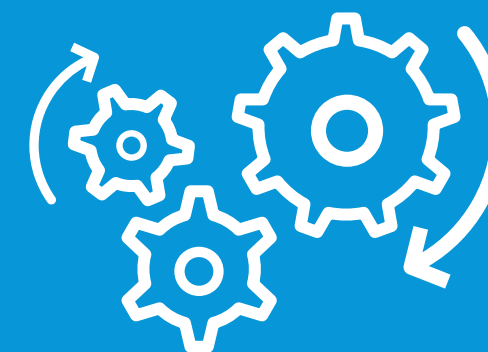
Processes
and Operations



Daily
Activities



Digital
Platforms



Business
Models



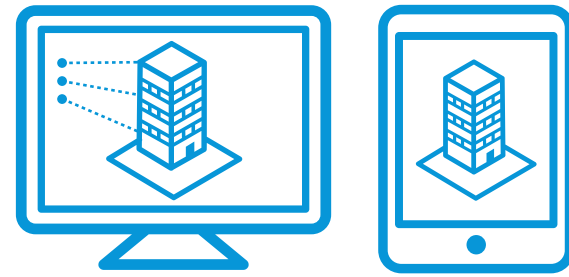
Culture and
behaviors

The Arc of Transformation

Activate your data – Reach new heights

Capitalize on information
Orchestrate your network
Improve your performance





Digital
Solutions

1



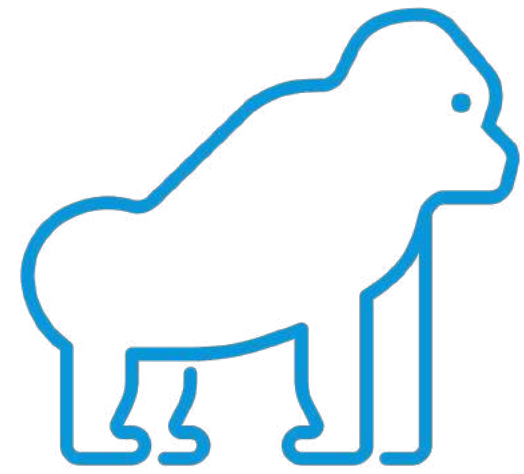
Digital
Platforms

THE INVISIBLE GORILLA

Large AEC players are moving faster than it seems

PLAYING DEFENSE, PLAYING OFFENSE

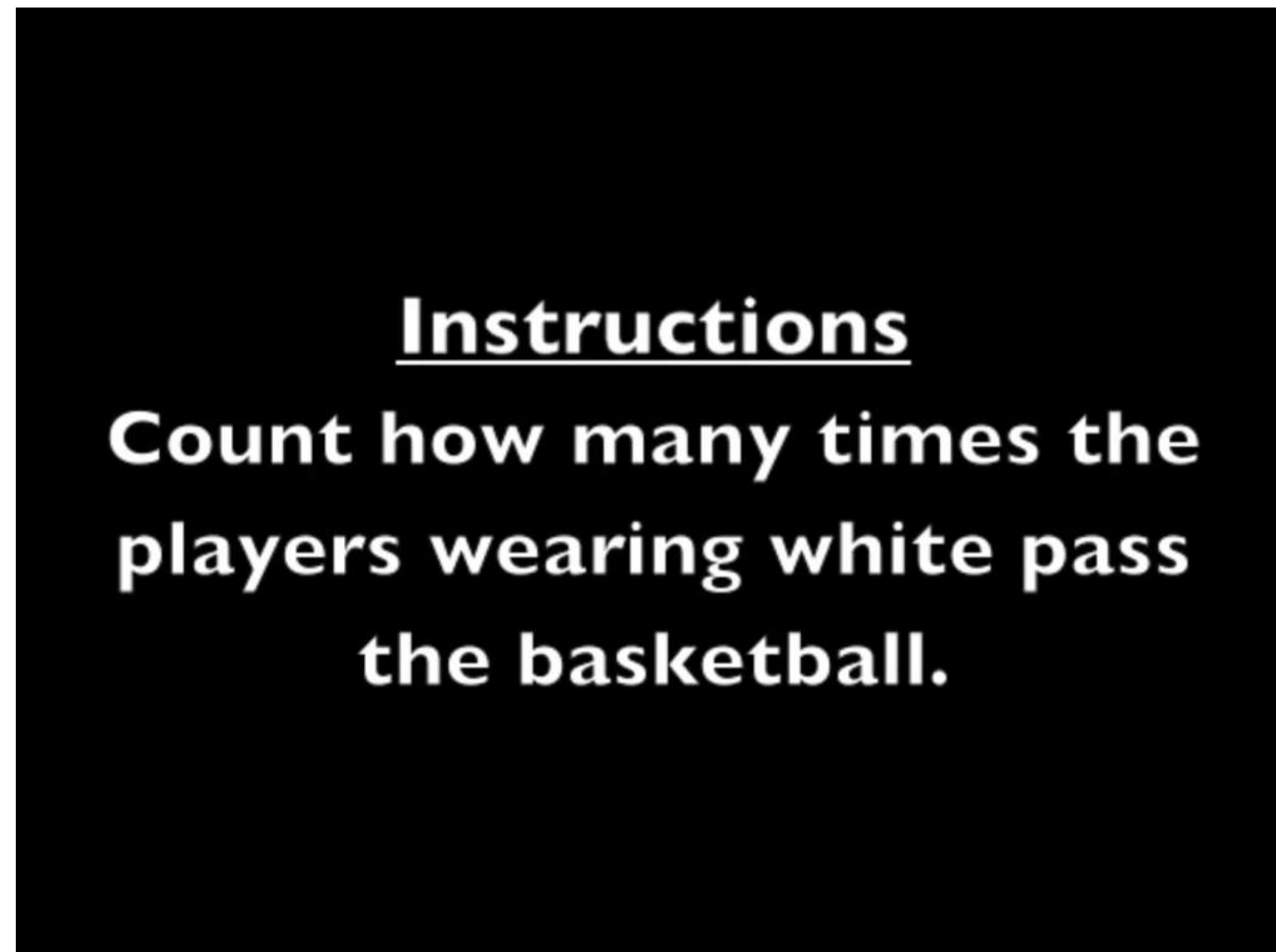
Some observations



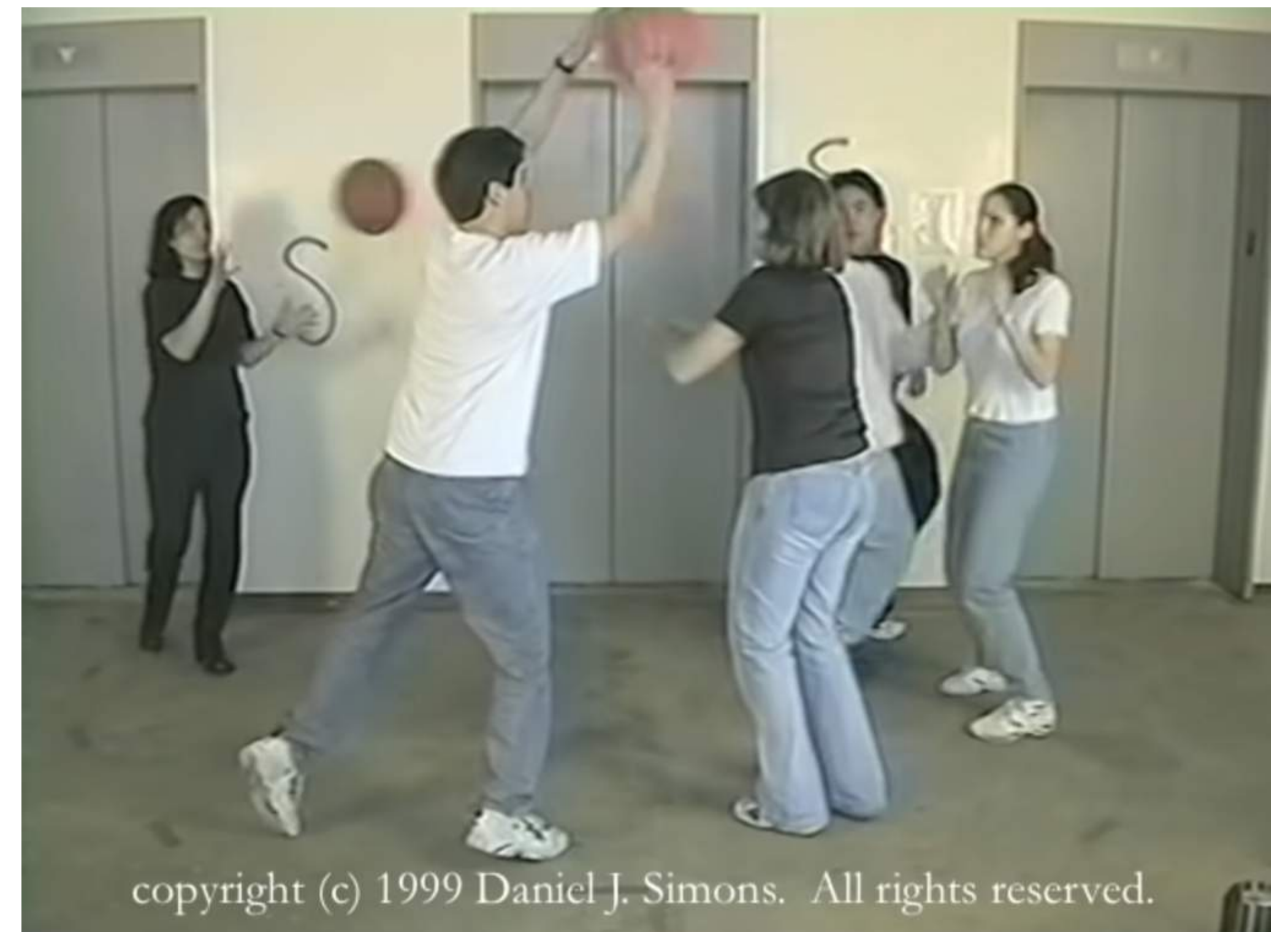
The Invisible Gorilla Experiment

An Acknowledgement of Our Own Blindspots

1.



2.



The video is from research by Daniel Simons and Christopher Chabris © 1999, Daniel J. Simons

Large AEC players are moving faster than it seems

CATERPILLAR®



 **TAKENAKA**


Wienerberger

Balfour Beatty

CLARK
CONSTRUCTION

FLUOR®



 **JLL**

 **DAITO TRUST
CONSTRUCTION**


Mortenson

Worley
energy | chemicals | resources

KONE

AECOM

Jacobs

**MOTT
MACDONALD**

KOMATSU

VINCI 


DPR
CONSTRUCTION



**BUREAU
VERITAS**

LafargeHolcim

Schneider
Electric


SAINT-GOBAIN

SKANSKA

 **Royal
Haskoning**

JOHN DEERE



 **mace**


SAINT-GOBAIN

ACS
ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS

 **HOCHTIEF**

Daiwa House

LARSEN & TOUBRO




TATA

 **ARCADIS**

COWI

 **CEMEX**

 **bam**

ferrovial

 **KAJIMA
CORPORATION**

NCC 

aurecon

SWECO 

Let's make a selection and take a closer look

CATERPILLAR®



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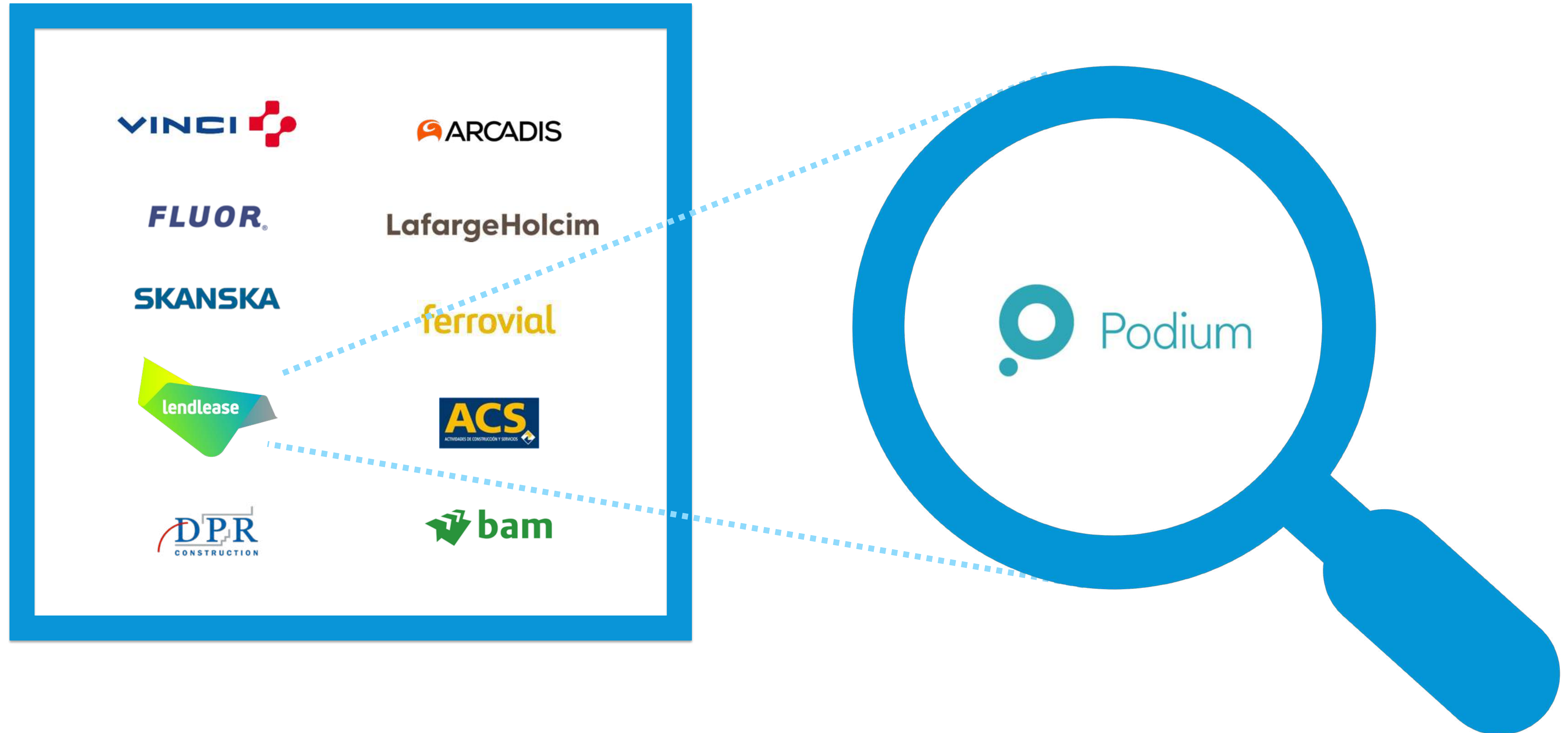
NCC

aurecon

Some examples in more details: VINCI



Some examples in more details: Lendlease



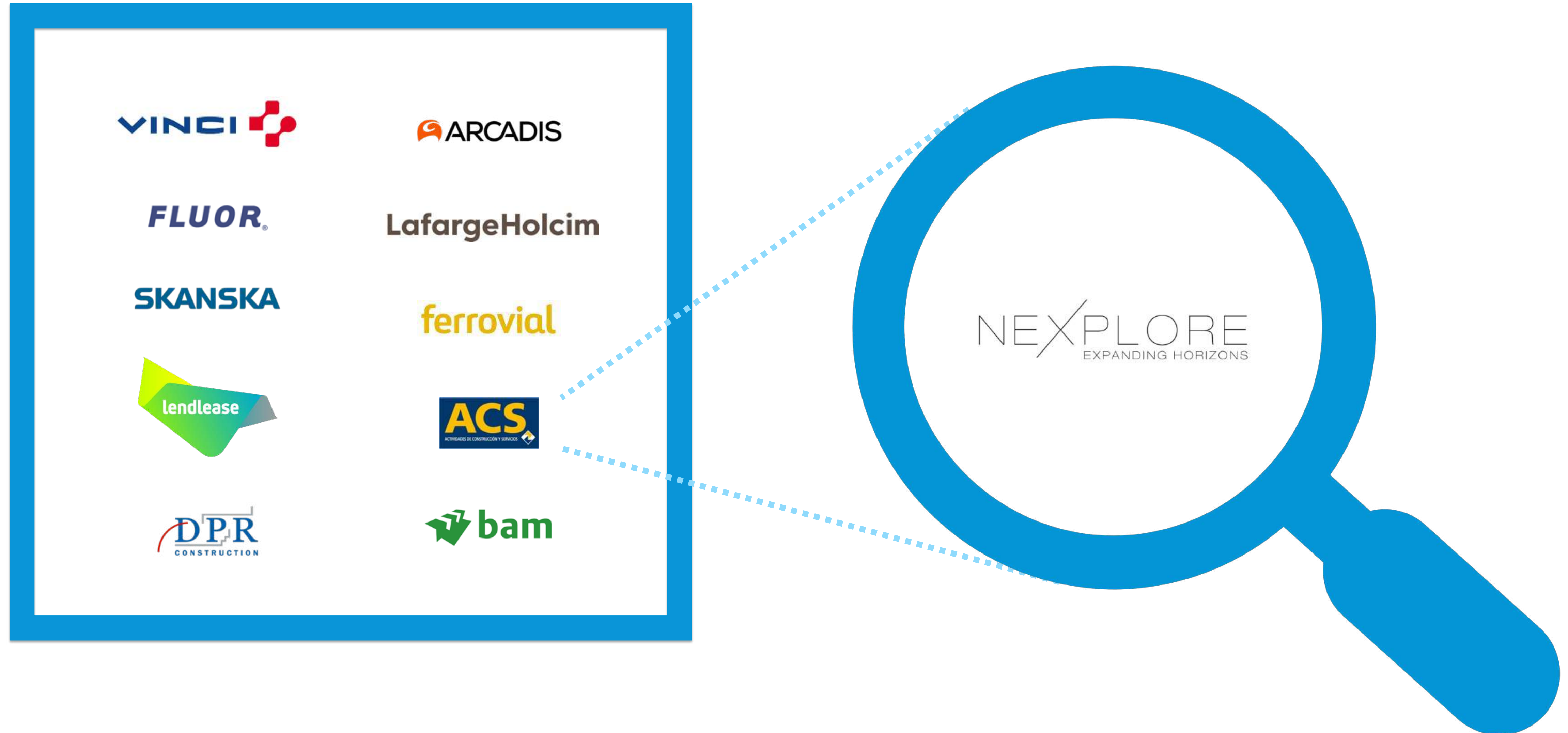
Some examples in more details: LafargeHolcim



Some examples in more details: Arcadis



Some examples in more details: ACS



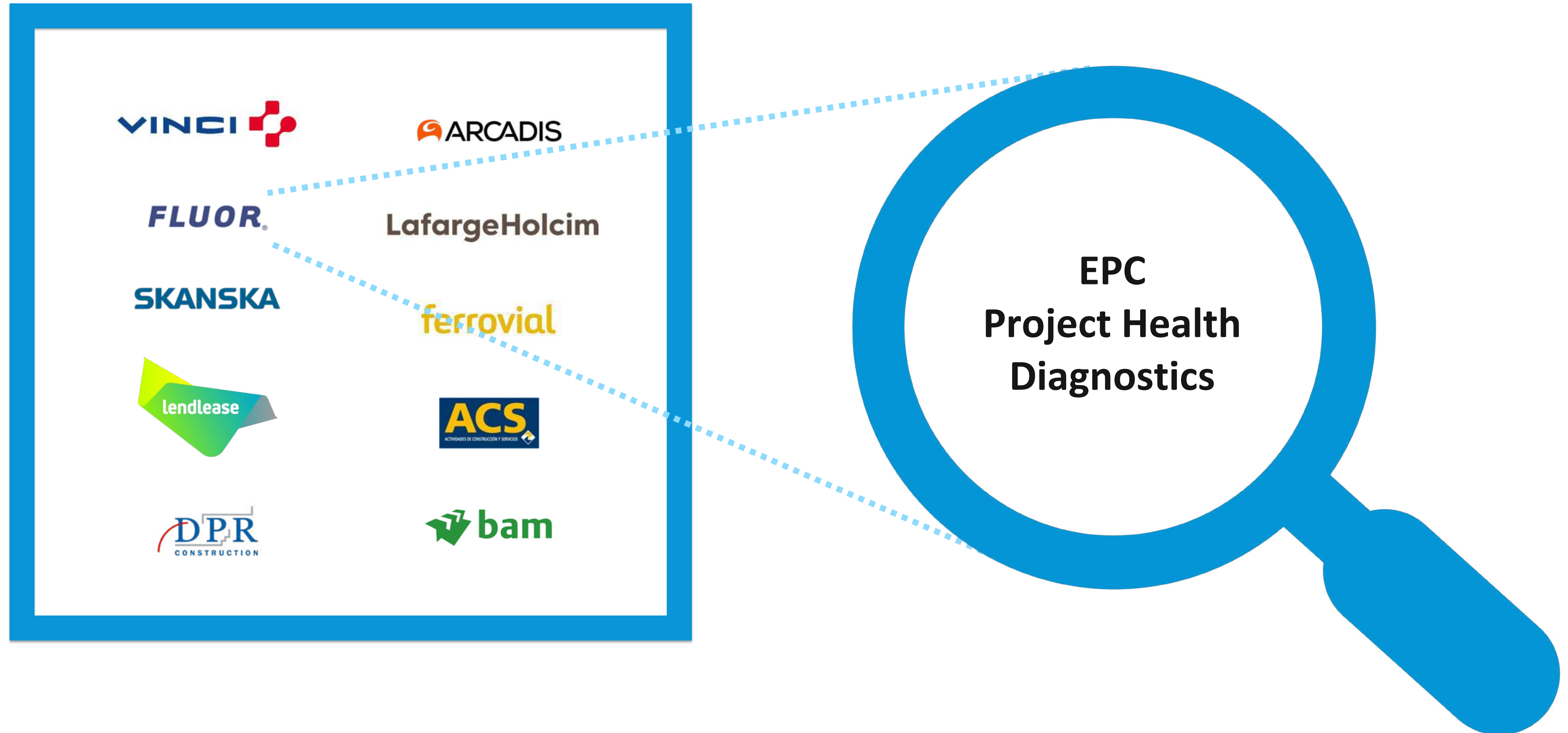
Some examples in more details: Skanska



Some examples in more details: DPR



Some examples in more details: Fluor



Some examples in more details: BAM



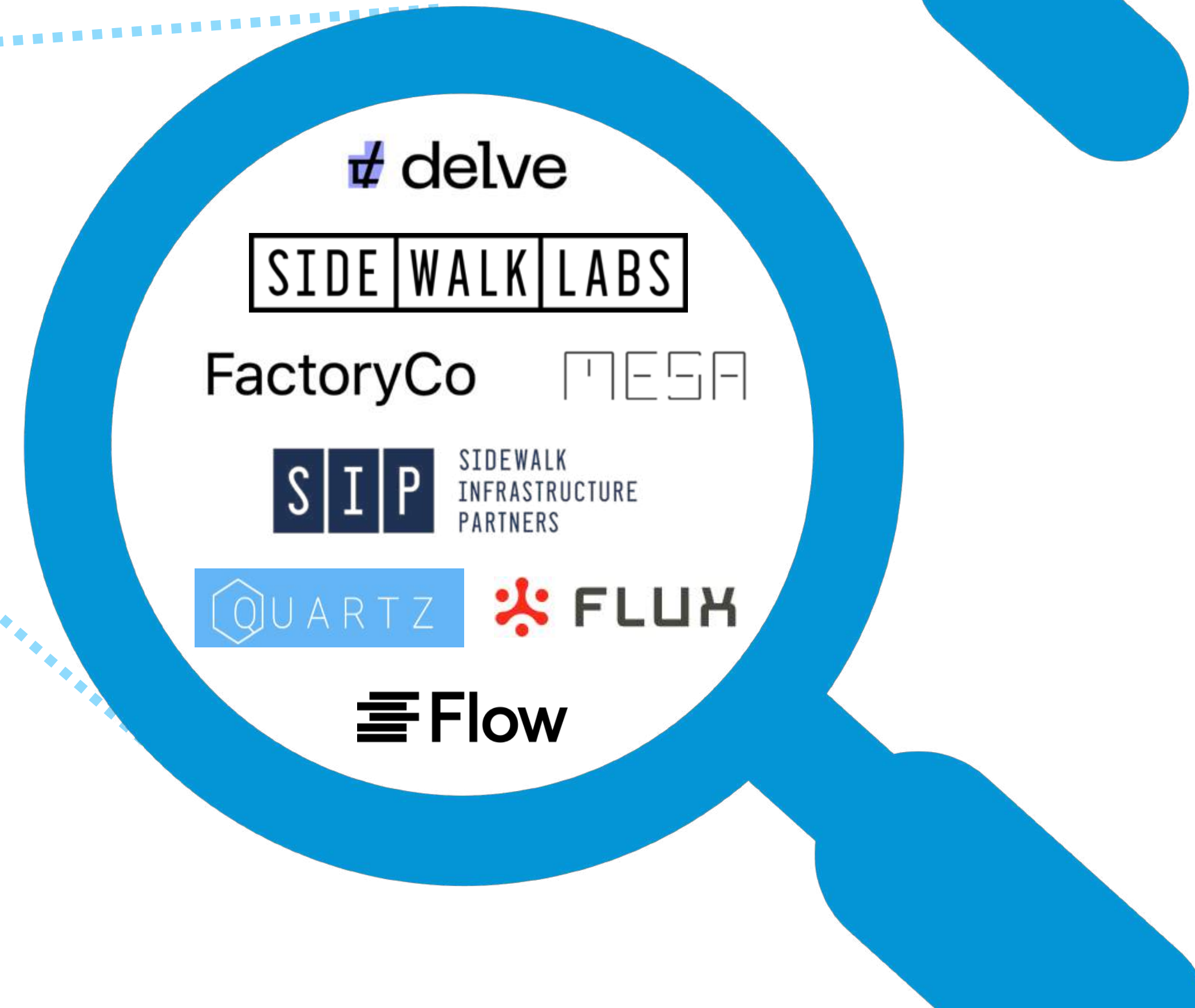
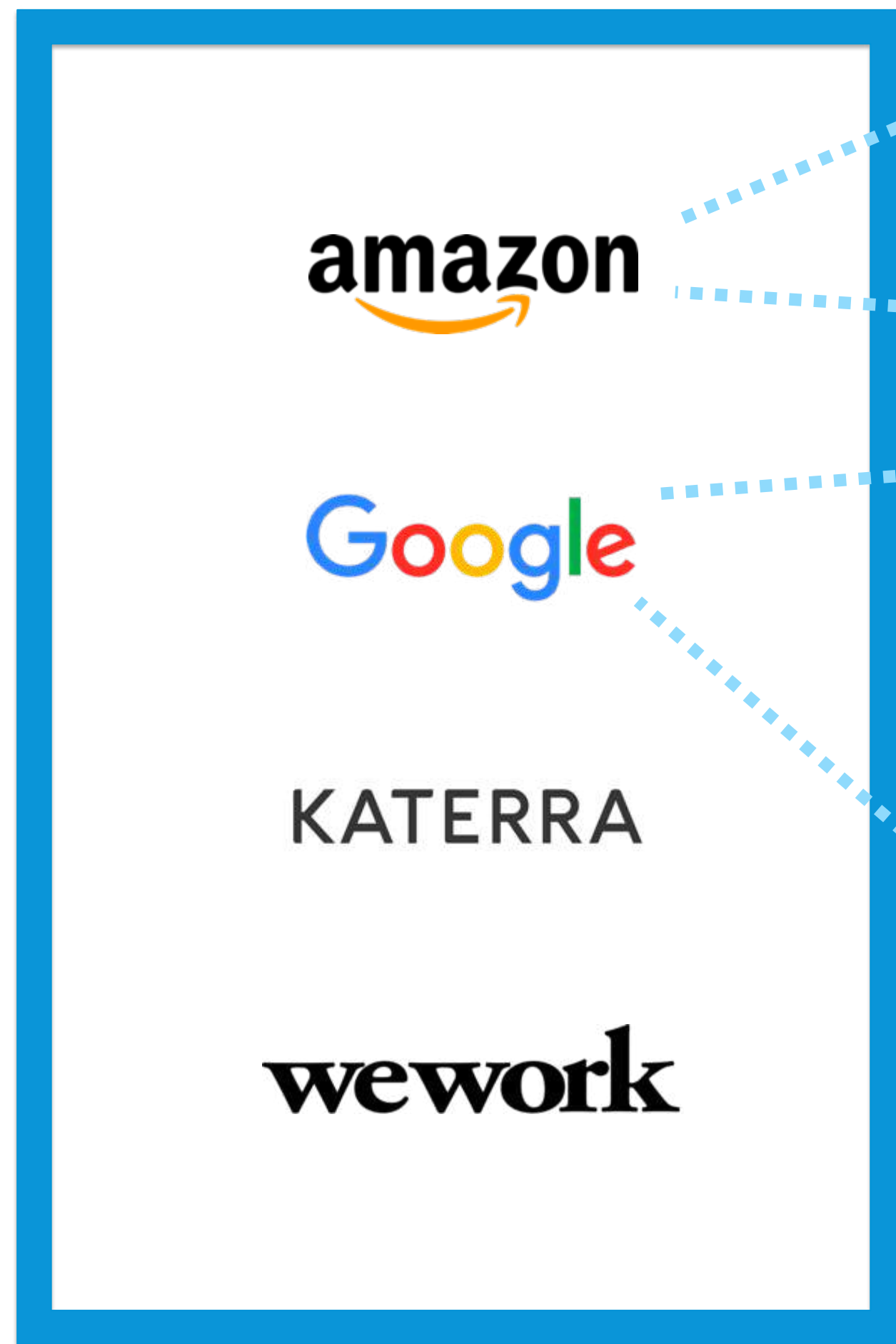
Some examples in more details: Ferrovial



There are many more examples of strategic initiatives

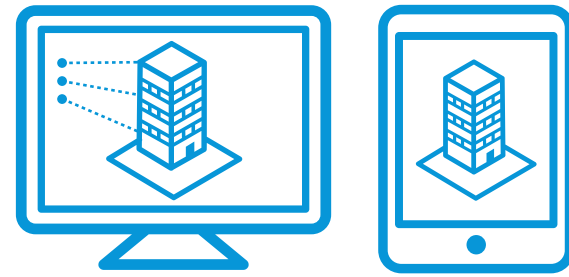


The usual suspects



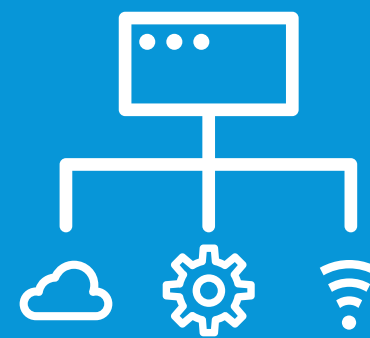
What about the Chinese giants?





Digital
Solutions

1



Digital
Platforms

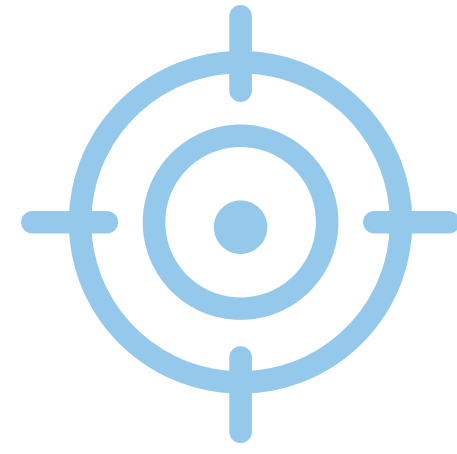
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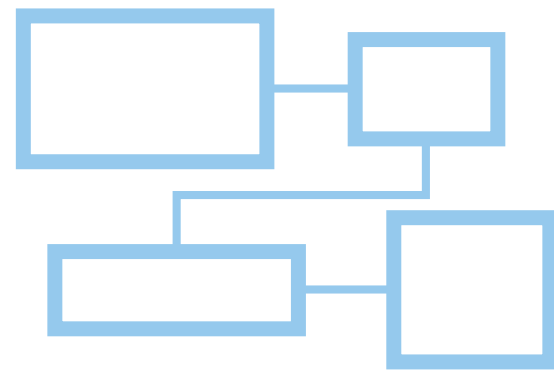
PLAYING DEFENSE, PLAYING OFFENSE

Some observations

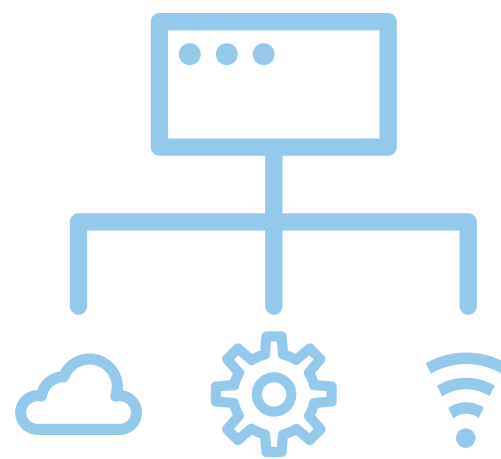
Typically, companies put their efforts in 3 domains



Test, develop, implement and scale
digital solutions
to solve major pain points

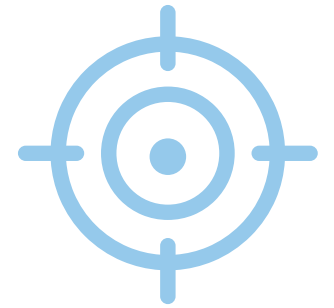


Adapt and modernize
processes and workflows

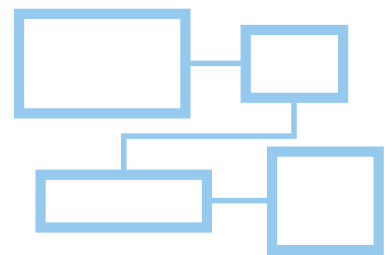


Use, learn from and build their own
digital platforms

The frontier was clear, but a new race started



Digital
Solutions



Processes and
Workflows



Digital
Platforms

**Productivity
Improvement**

Cost savings

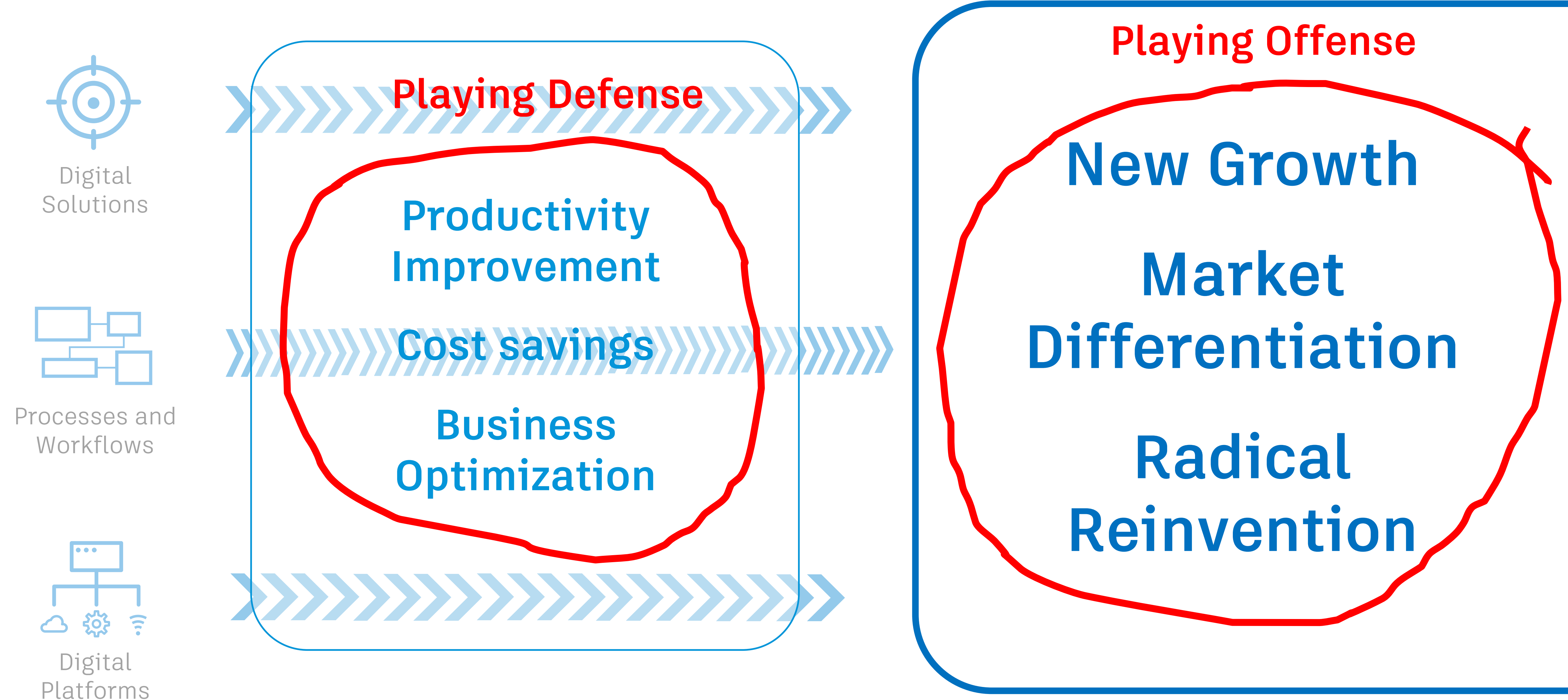
**Business
Optimization**

New Growth

**Market
Differentiation**

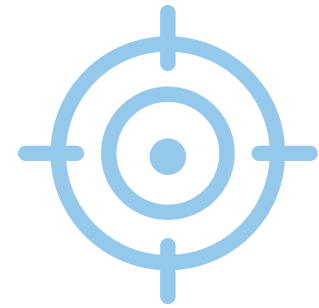
**Radical
Reinvention**

Playing Defense, Playing Offense

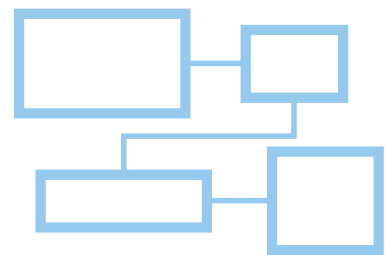


Playing Defense, Playing Offense

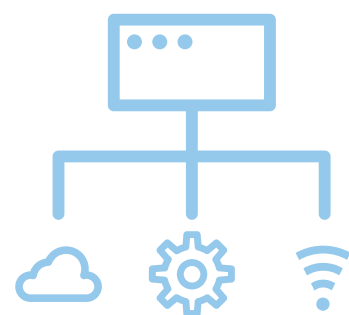
Playing Defense



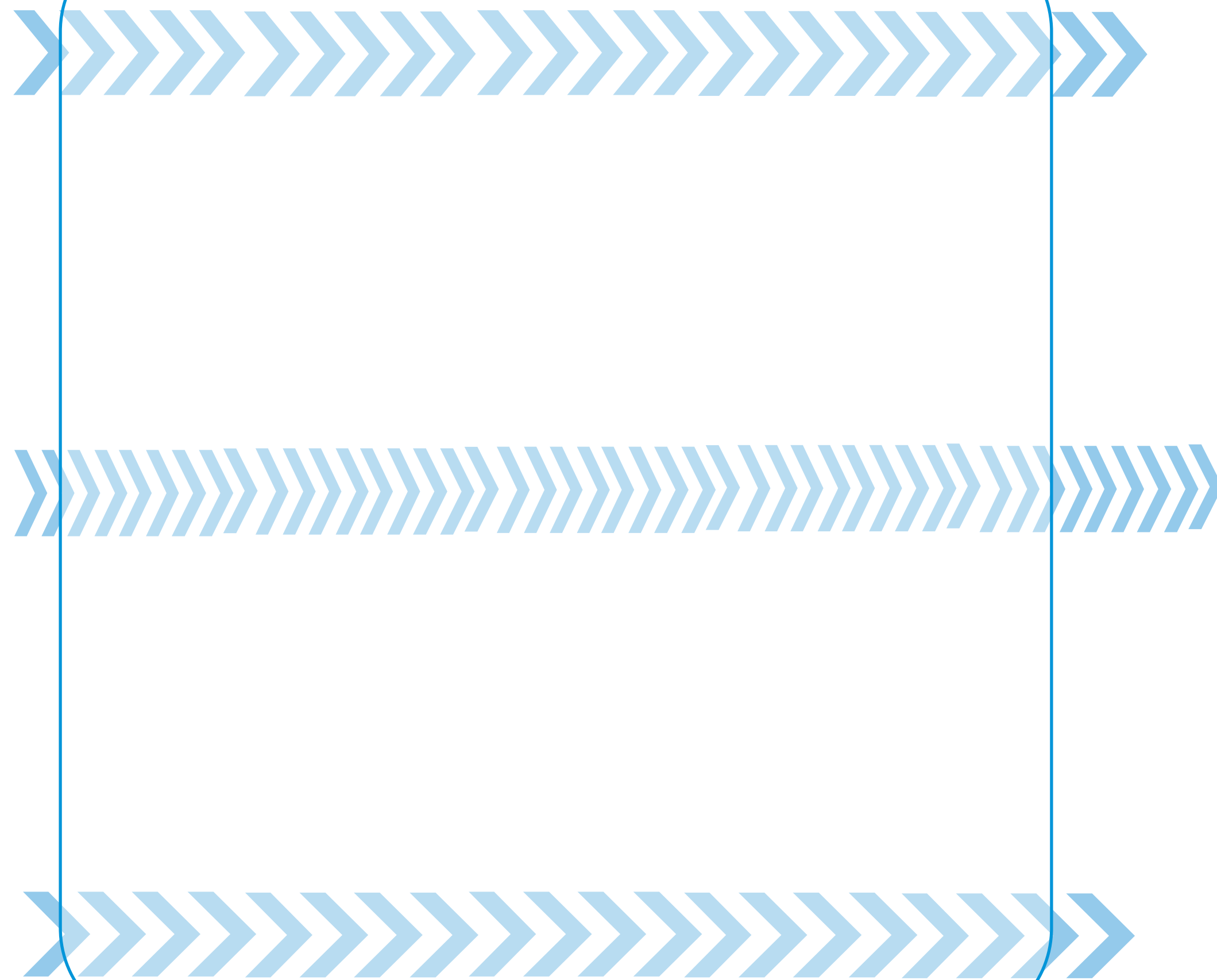
Digital
Solutions



Processes and
Workflows



Digital
Platforms



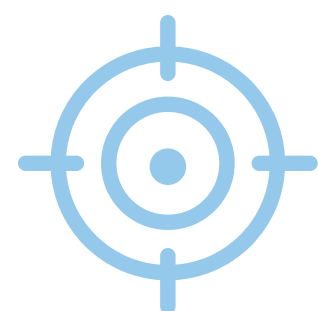
Playing Offense

**The rules
of the game
are different**

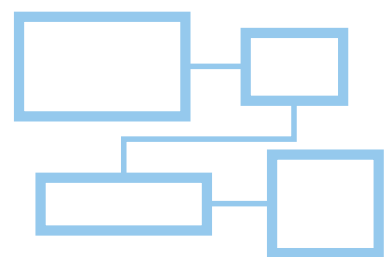
You will have to do more, and differently

Playing Offense

Playing Defense



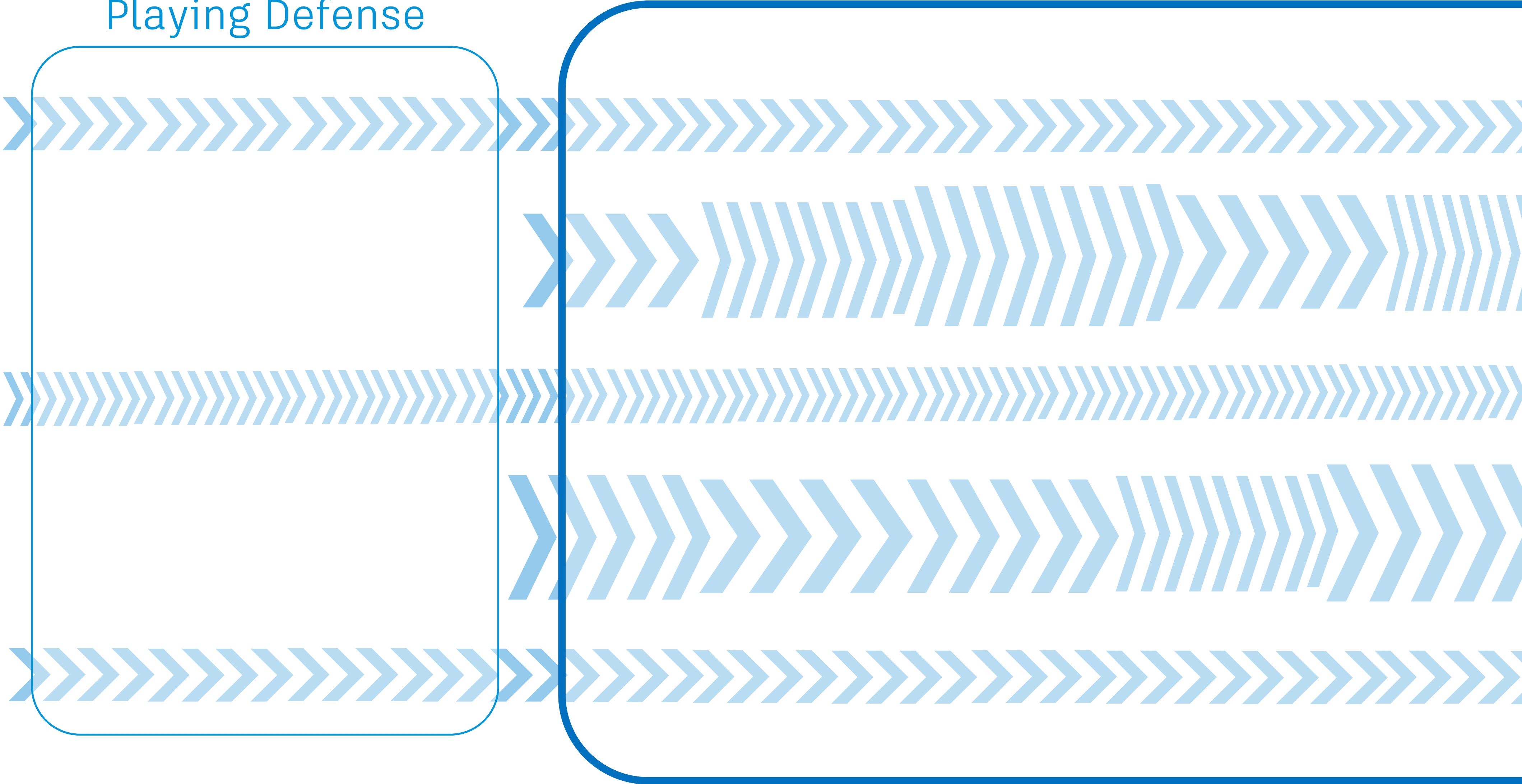
Digital
Solutions



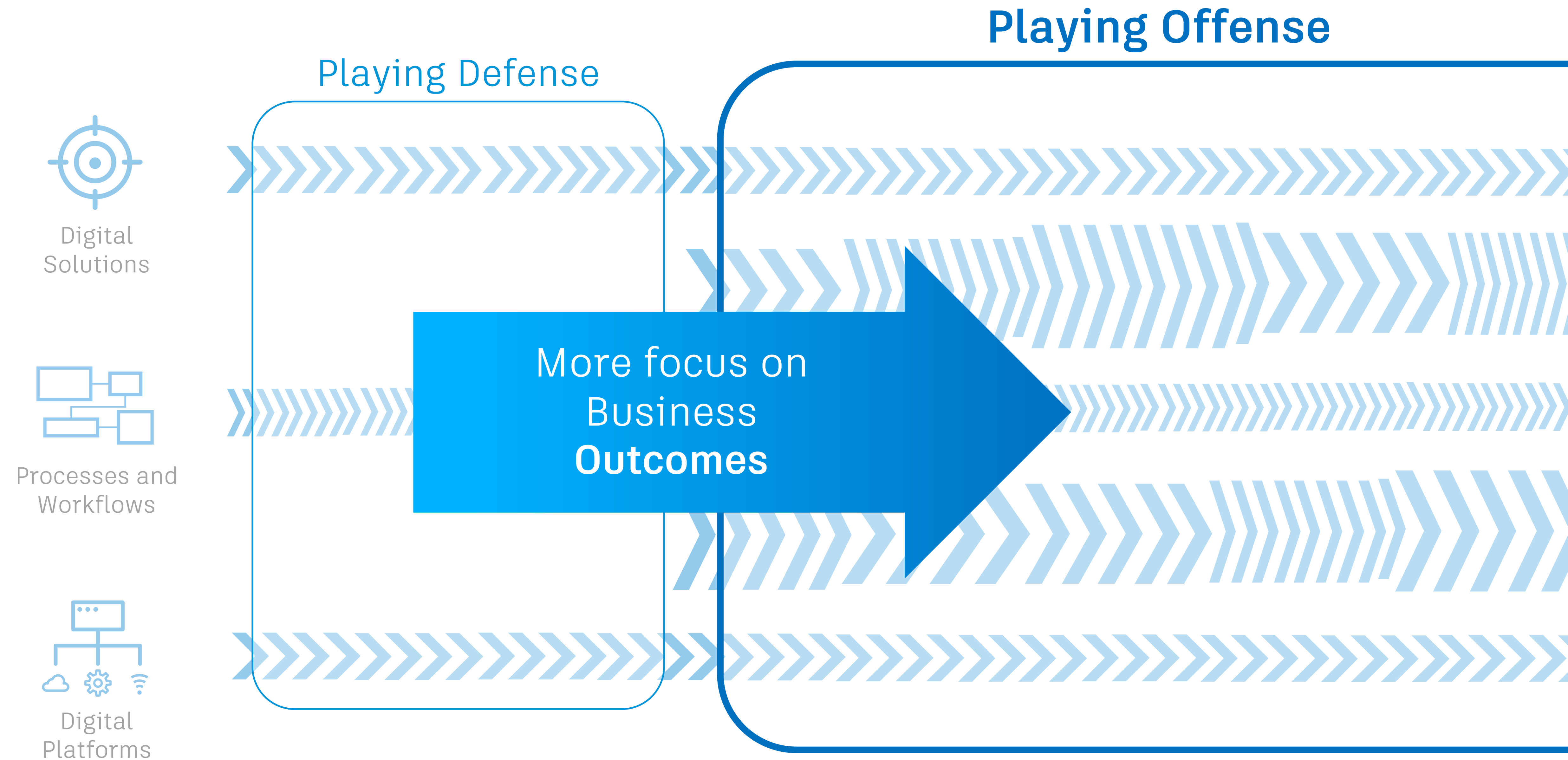
Processes and
Workflows



Digital
Platforms



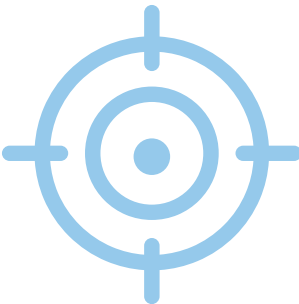
On the Importance of Outcomes



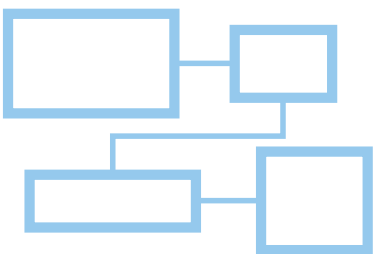
Build the Right Platform, Business Model...

Playing Offense

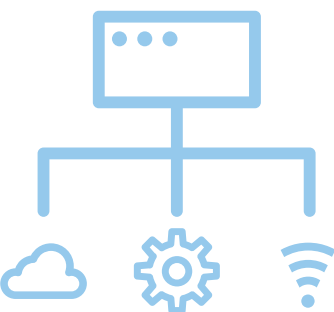
Playing Defense



Digital
Solutions



Processes and
Workflows



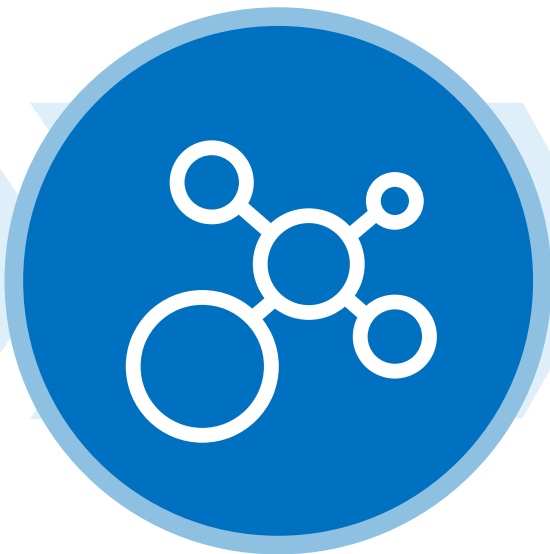
Digital
Platforms



Right Platform



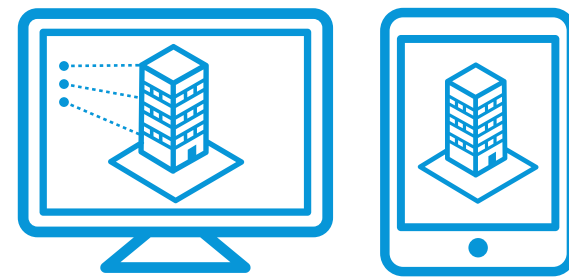
Right Business Model



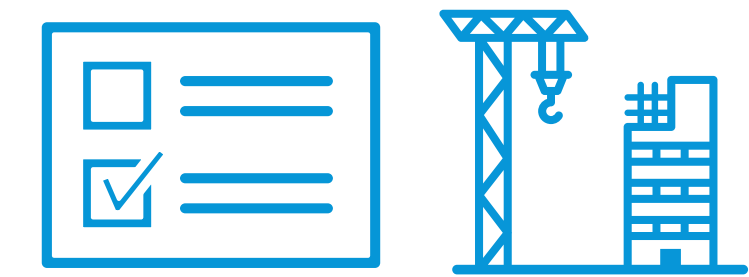
Right Ecosystem



Right Culture



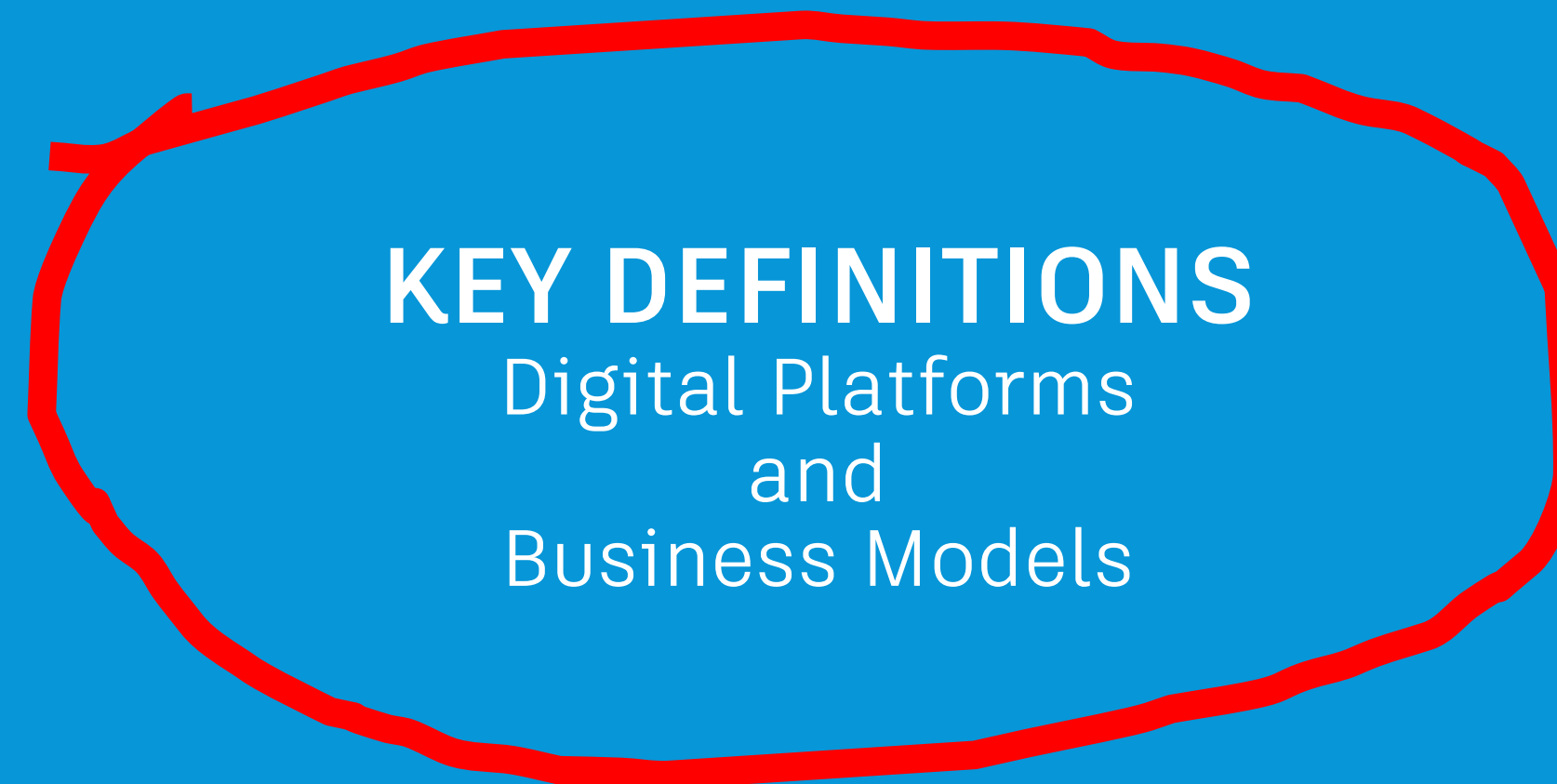
Digital
Solutions



Processes
and Operations

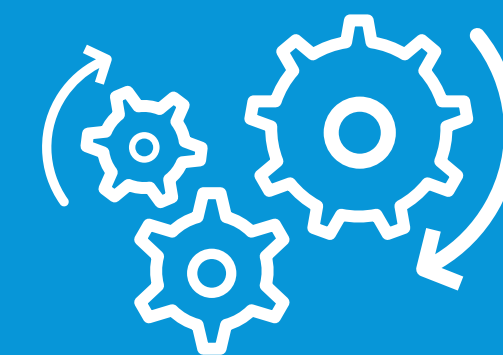


Digital
Platforms



KEY DEFINITIONS

Digital Platforms
and
Business Models



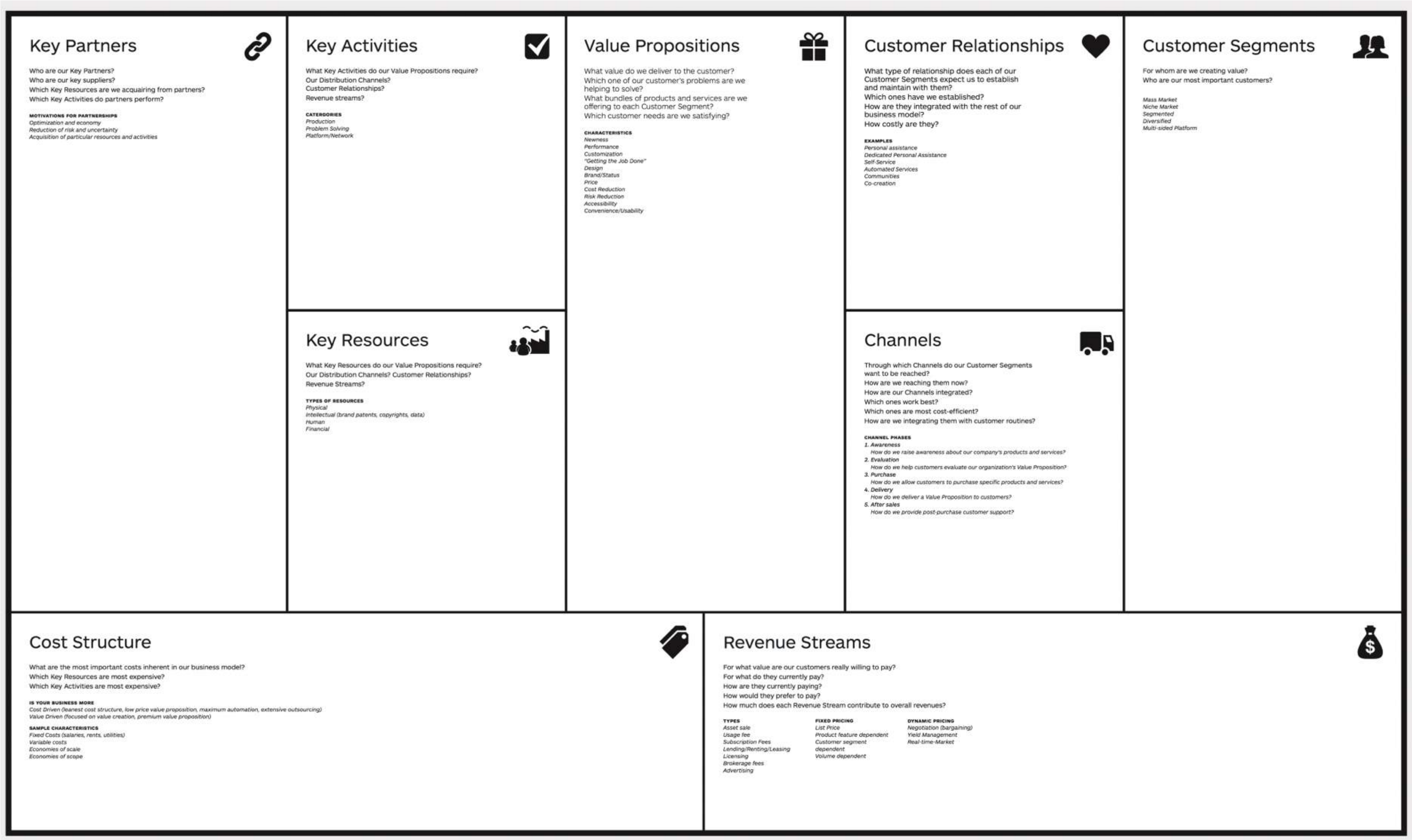
Business
Models

Platforms



Business Model

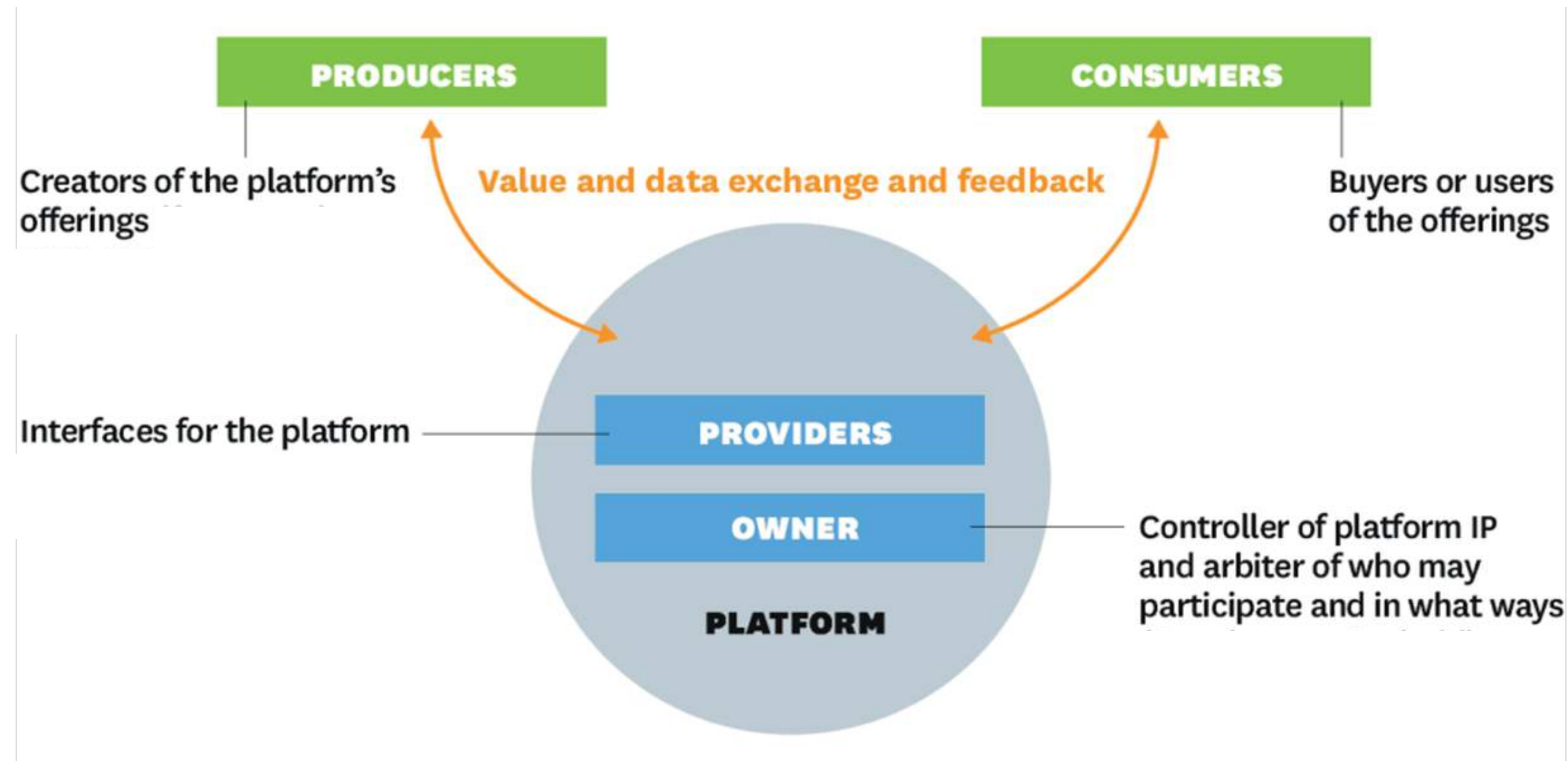
Business Model Canvas



From *Business Model Generation*, Alexander Osterwalder, Yves Pigneur, 2010

Platform business model

A platform business is a business model that creates value by facilitating exchanges between two or more interdependent groups, usually consumers and producers.



”Why is it so difficult for established companies to pull off the new growth that business model innovation can bring? Here is why: they don’t understand their current business model well enough to know if it would suit a new opportunity or hinder it, and they don’t know how to build a new model when they need it.”

Clayton M. Christensen, The Innovator’s Dilemma (1997)

Why Crisis Could Be the Catalyst to Construction Business Model Transformation



Olivier Lepinoy  June 10, 2020

 18 min read

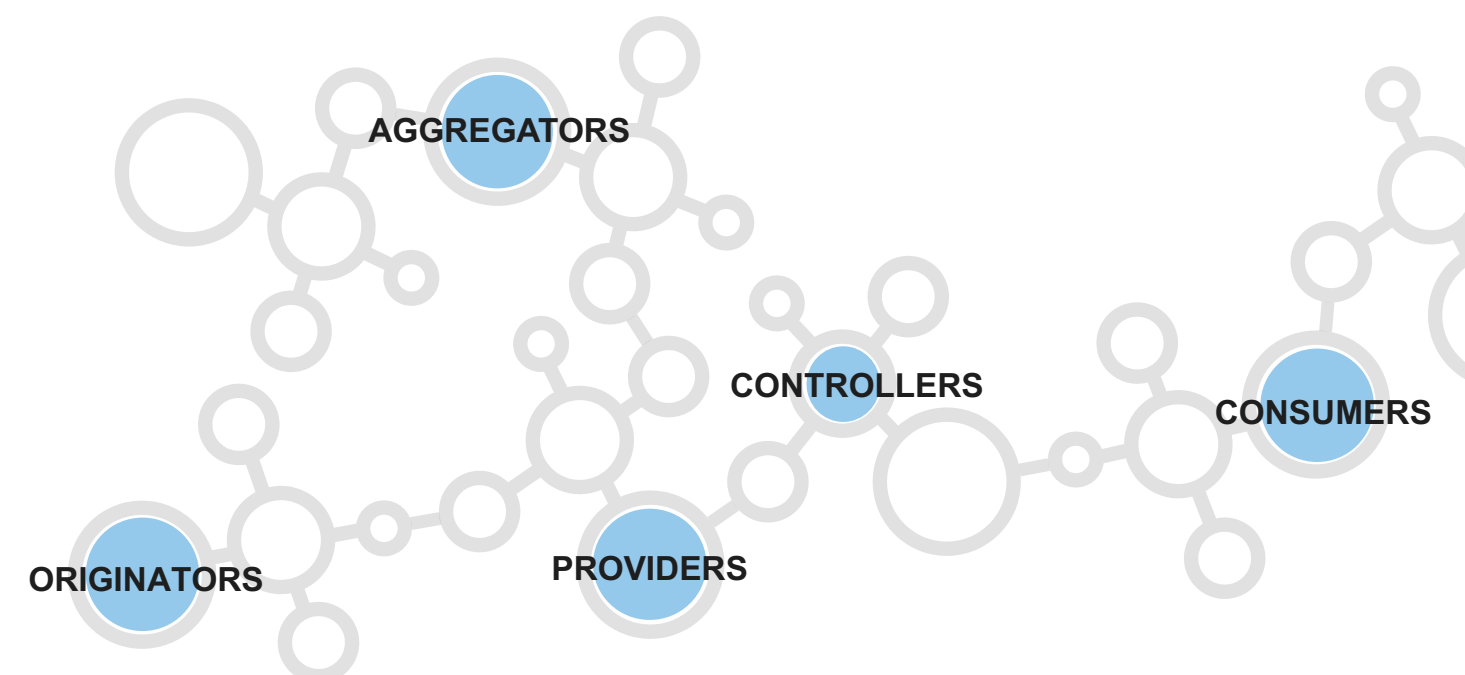
Why Innovation Through Technology Is No Longer Enough

Since the dawn of the Information Age, Technology, and with it, Innovation has been boundless. With that comes fundamental societal changes. Data is the new oil, and Information is the new virtual dollar that companies wield. Yesterday, Innovation was a rare breakthrough; today, it is the requirements of aspiring entrepreneurs and companies looking to generate an even larger profit. In the future, the very nature of innovation and disruption will change.

Disruption is also prevalent in the market. The consequences of innovation are breaking up traditional concepts or norms, or in this case, something originating from outside the market. While some construction firms have developed ad-hoc technology solutions to manage the shift to remote work in the face of this crisis, it remains to be seen whether these practices will be kept in place post-crisis. These companies found themselves torn between the demands of radically new realities imposed by “the New Normal” and the deep-rooted necessity to transform digitally. Meanwhile, clients are increasingly concerned that the sector is not keeping pace with the rates of improvement seen in other sectors of the economy.

The Future Business Models of Construction

The whole Architecture, Engineering, Construction, and Operation (AECO) industry may turn towards Platform Business Models. The traditional construction model of a sequential/pipeline business model (focused on controlling and vetting the clients and the suppliers) could very well be phased out in favor of a Platform Business Model (orchestrating resources, selling services to the whole ecosystem, leveraging a network). With difficulties in staying ahead of the competition, grow, and maintain their margins, most of the largest AECO firms look at Platform Business Models with envy. Yet, the transformation of a Business Model is a long journey, and not all AECO firms are agile enough and have the investment capabilities to pivot toward new models.



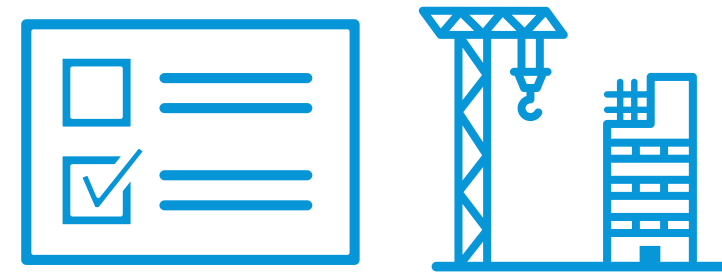
The Largest Players Are Moving Faster than We Think

In order to avoid commoditization, integrating value-added services, real estate development, and even design and fabrication shops to streamline delivery, are some of the new practices adopted by some construction companies. The most advanced ones launch strategic initiatives related to Industrialized Construction and Design for Manufacturing and Assembly (DfMA). These firms have developed their own prefabrication delivery capability and embrace modular construction. Companies such as Boldt, Clark, DPR, Mortenson, Balfour Beatty, BAM, Mace, and NCC are examples here. They manage these new businesses in various ways, sometimes through subsidiaries or spin-offs. Industrialized Construction is the beginning of a radical transformation journey for these firms.

Today vs. Tomorrow: Embracing Duality and Working on All Aspects of Transformation

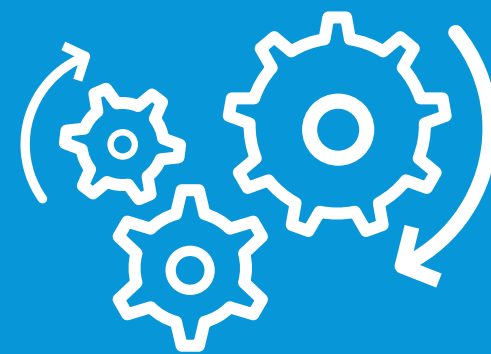
While business transformation is needed to sustain the future of the AECO industry, firms still need to adjust their strategy to address immediate concerns. According to an [EY report on business disruption](#), this can be achieved by embracing duality, “As a result, strategy can be neither long-term nor short-term; an organization’s strategy must encompass both, and the interactions in between.”

With Digital Transformation comes a new era of data and cultural reinvention that will be the answers to the technological aspect of the transition. For this matter, culture is as important as technology, and for any firm, a strong and agile culture is a competitive advantage. Construction tends to be a late adopter to change, and for the AECO industry, this new wave of transformation is also a cultural one. For these firms, moving to more data centricity is an immense cultural challenge. “The way things are done,” behaviours, beliefs, customs, attitudes, given ideas, feelings, perceptions, emotions are disrupted.



Processes
and Operations

2



Business
Models

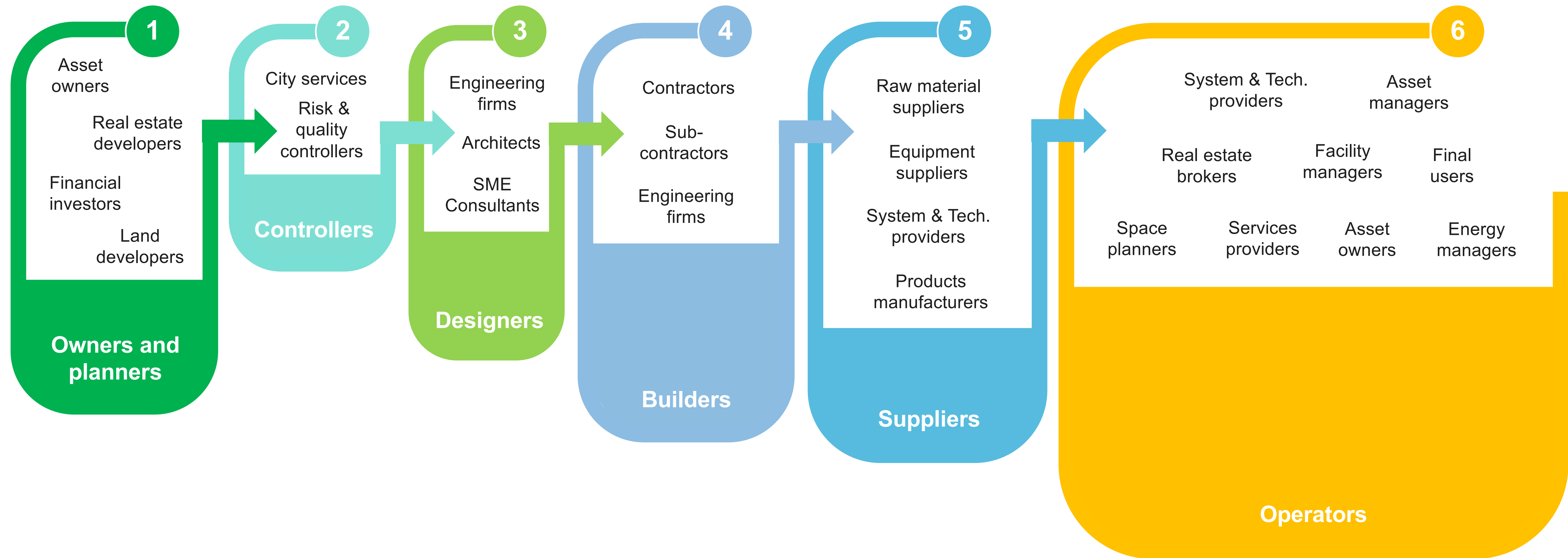
WHO IS DOING WHAT?

Radical Changes in Business Ecosystems

THE END GAME

Tomorrow's Value Chain and Ecosystems

Today's sequential and fragmented value chain

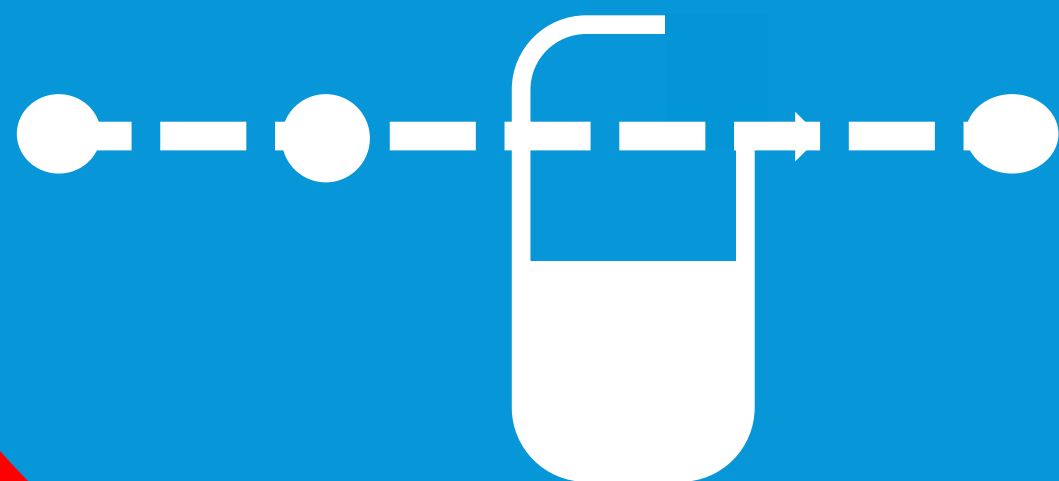


3 types of strategic move

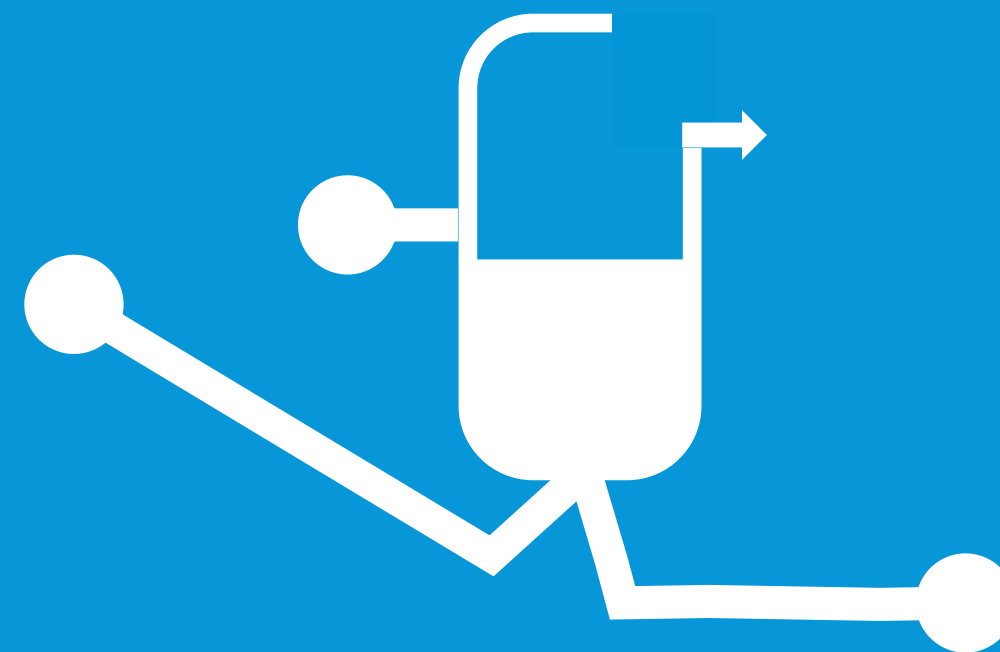
3 types of growth strategy

3 types of business model **diversification**

Acquisitions

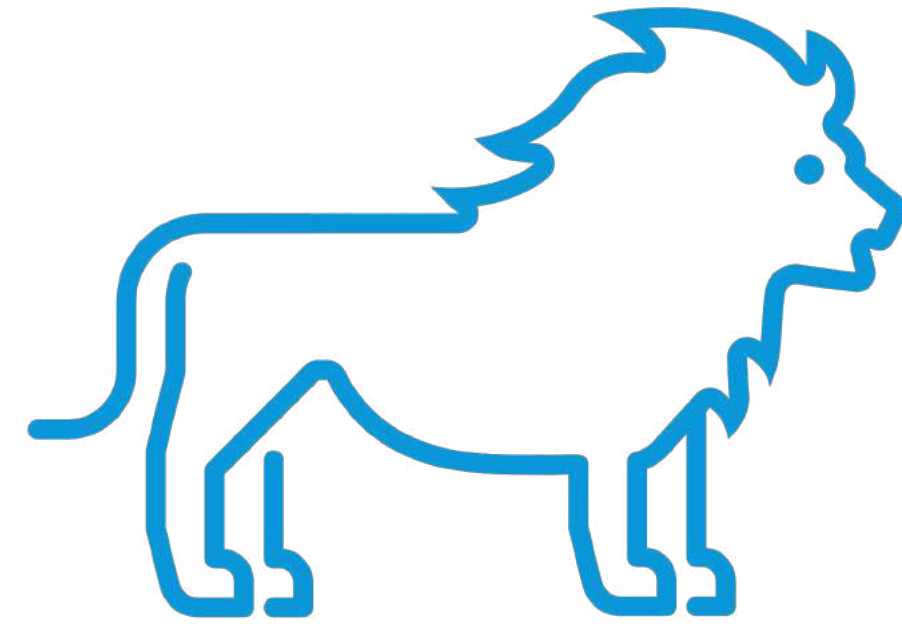


New Ventures



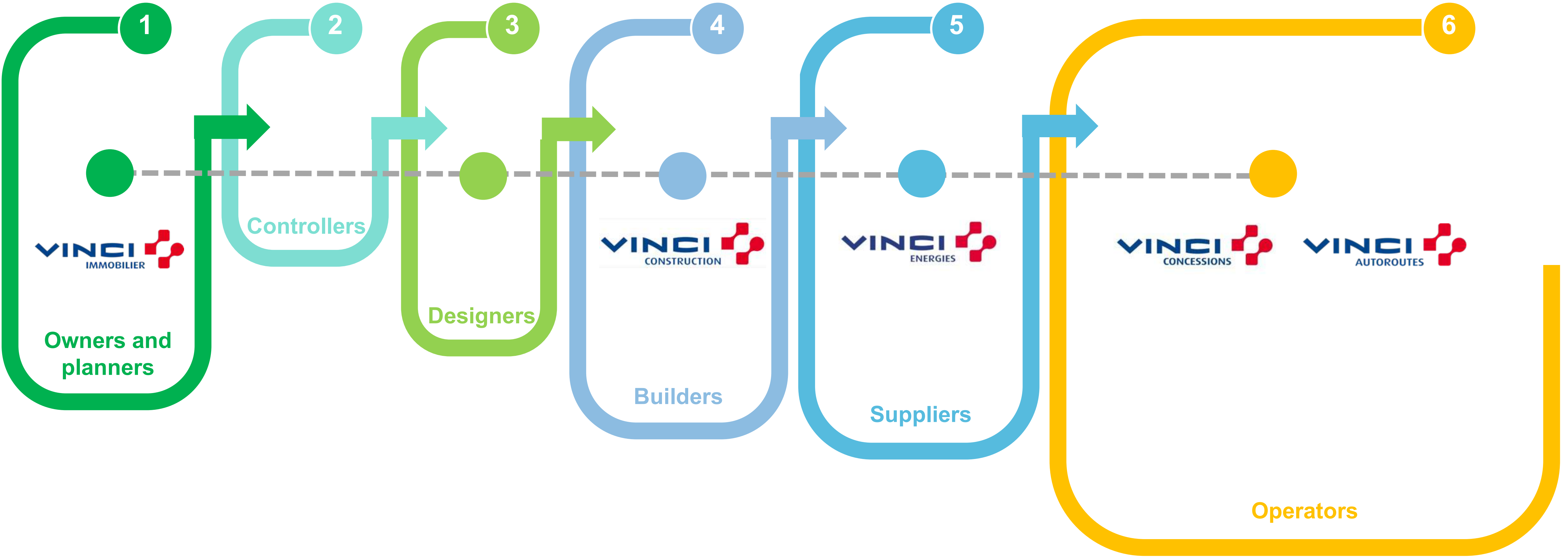
Alliances



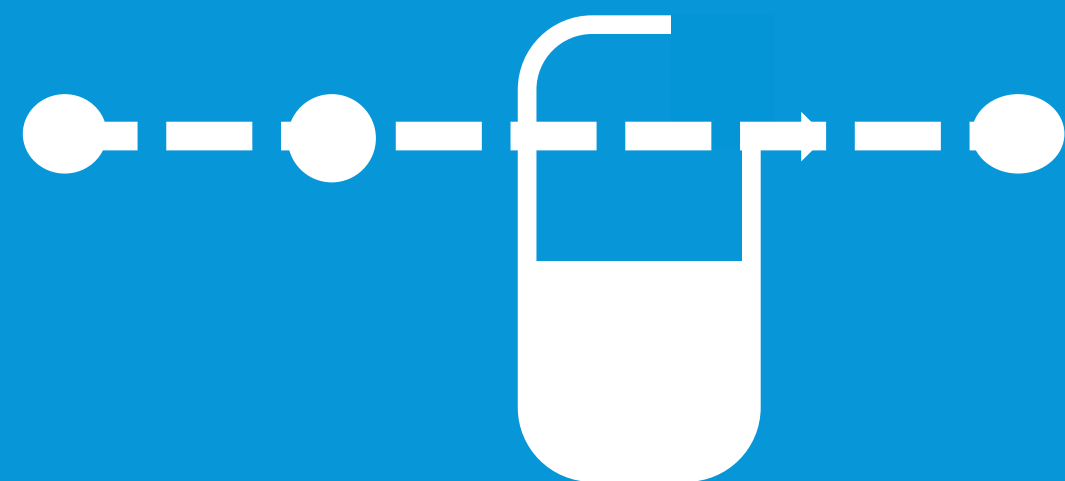


Lion

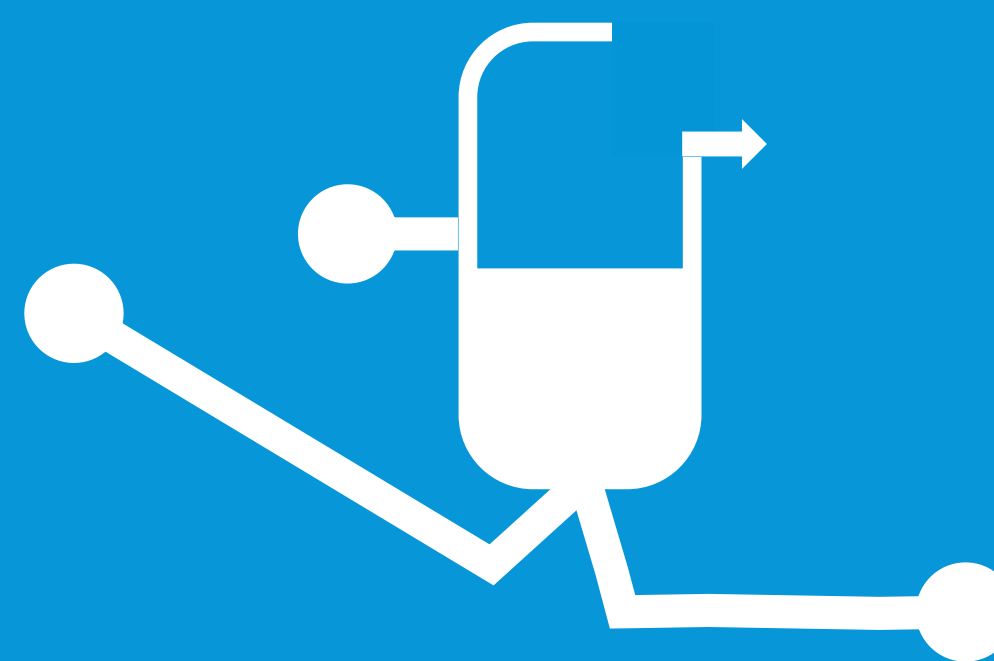
Acquisitions



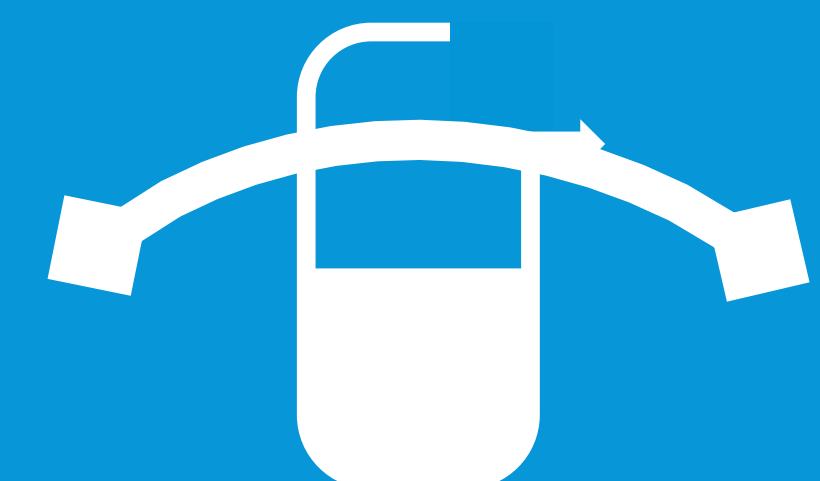
Acquisitions

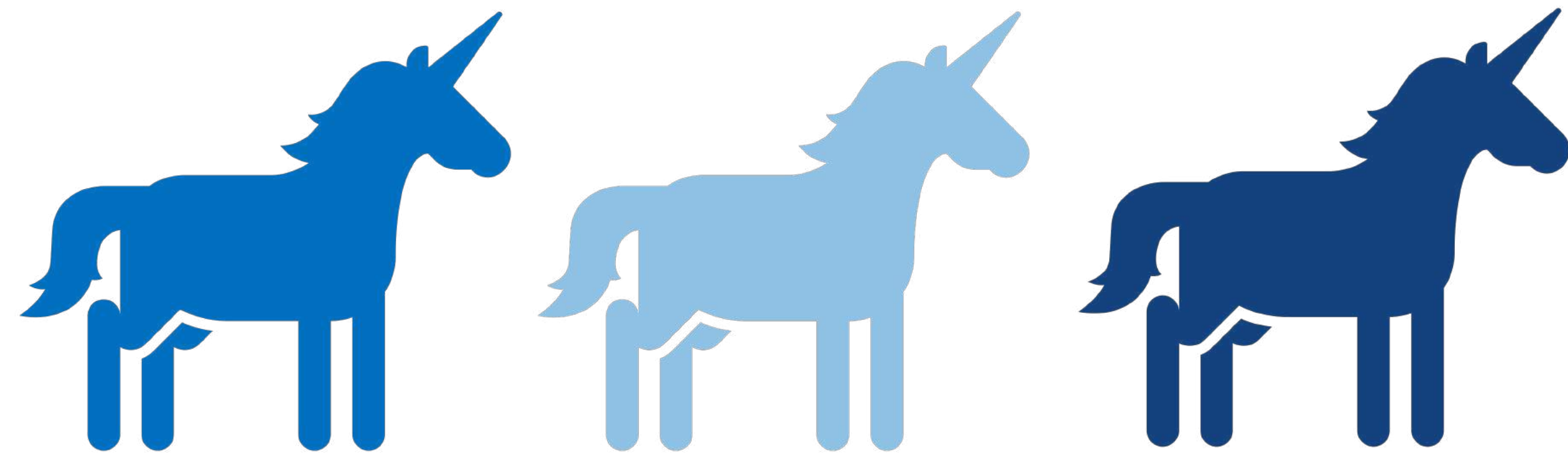


New Ventures

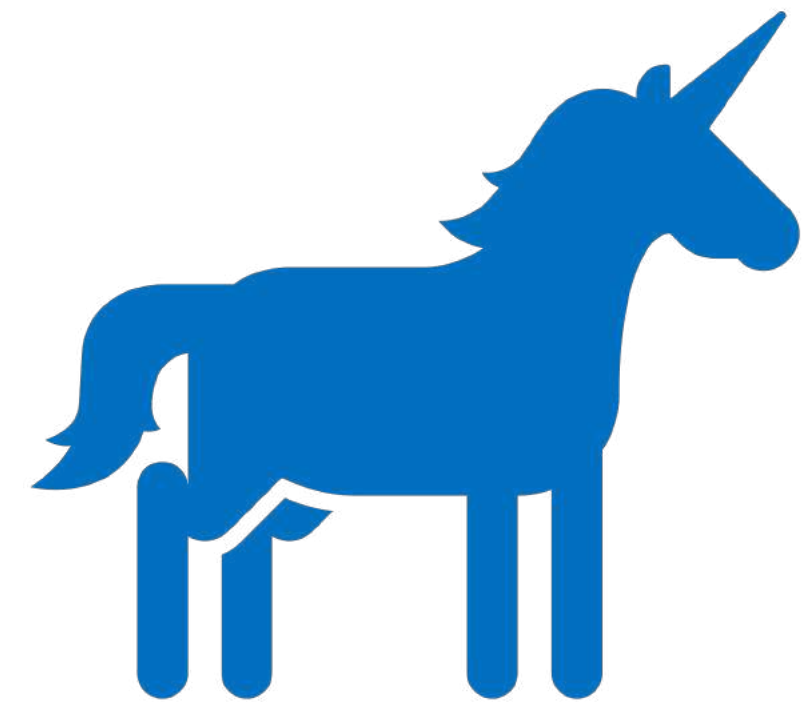


Alliances



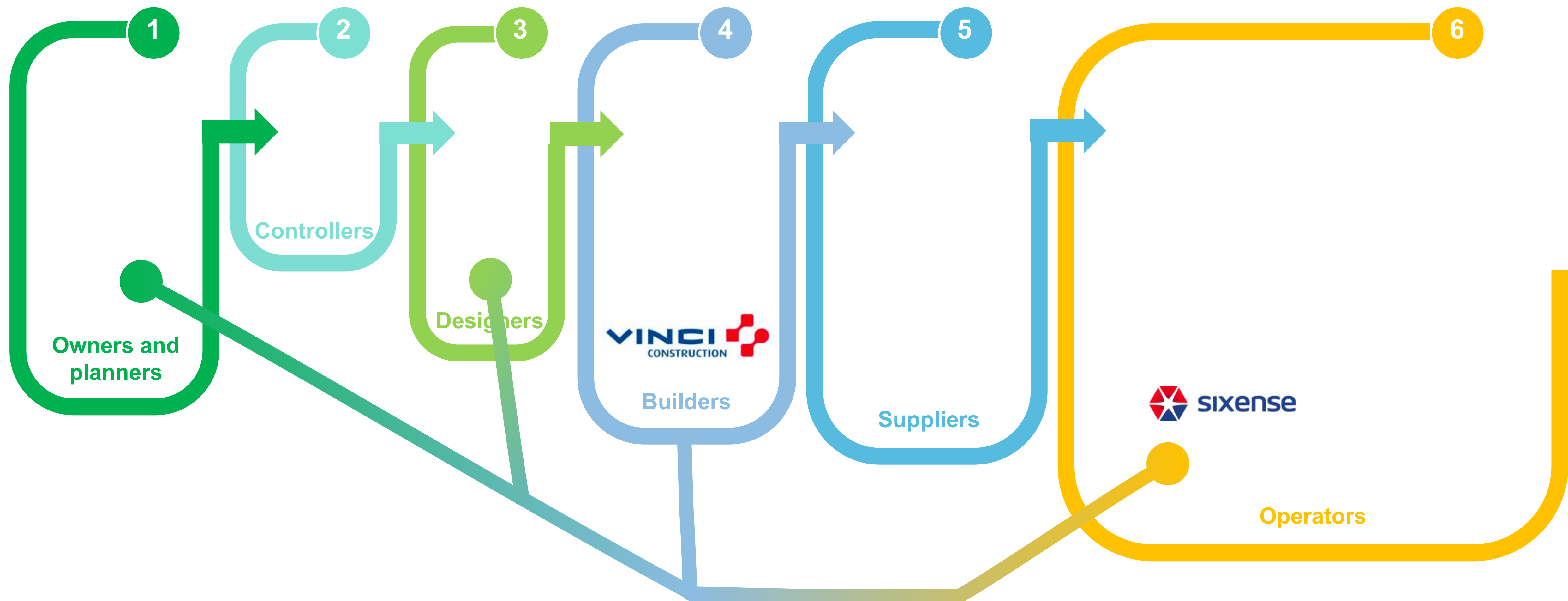


3 types of unicorn

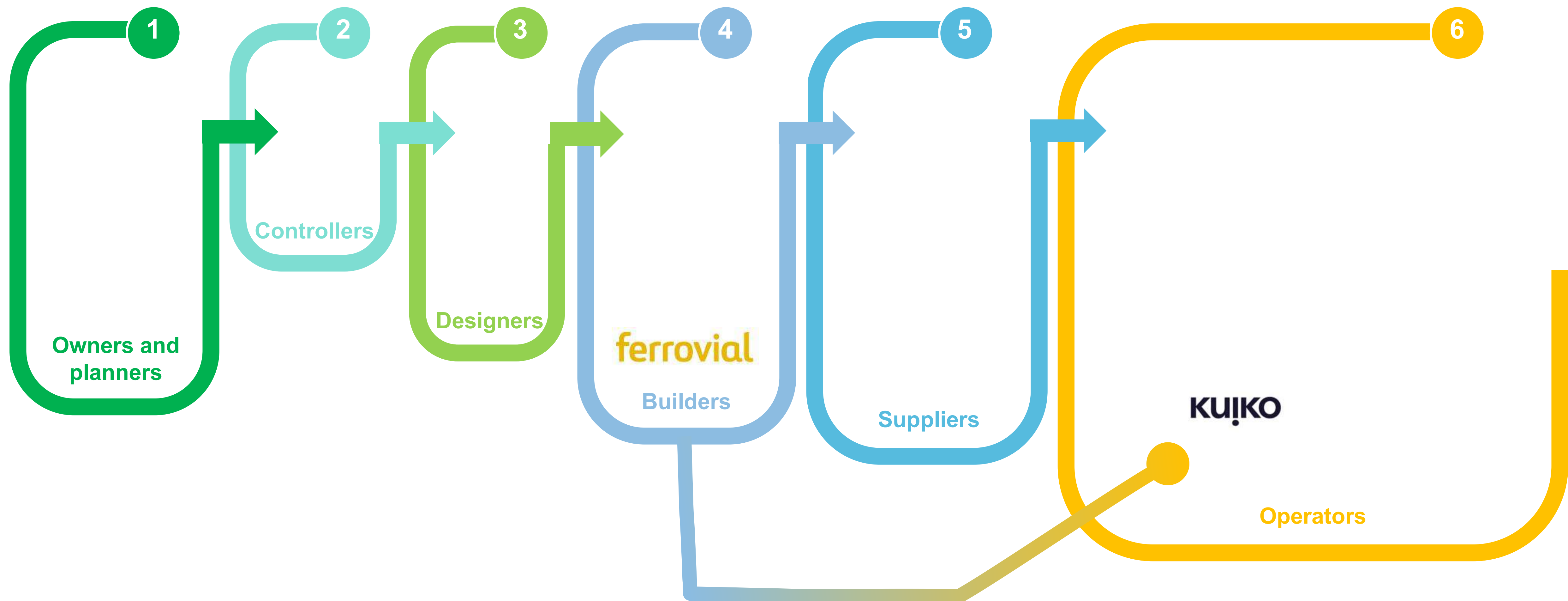


Conquest of New Markets

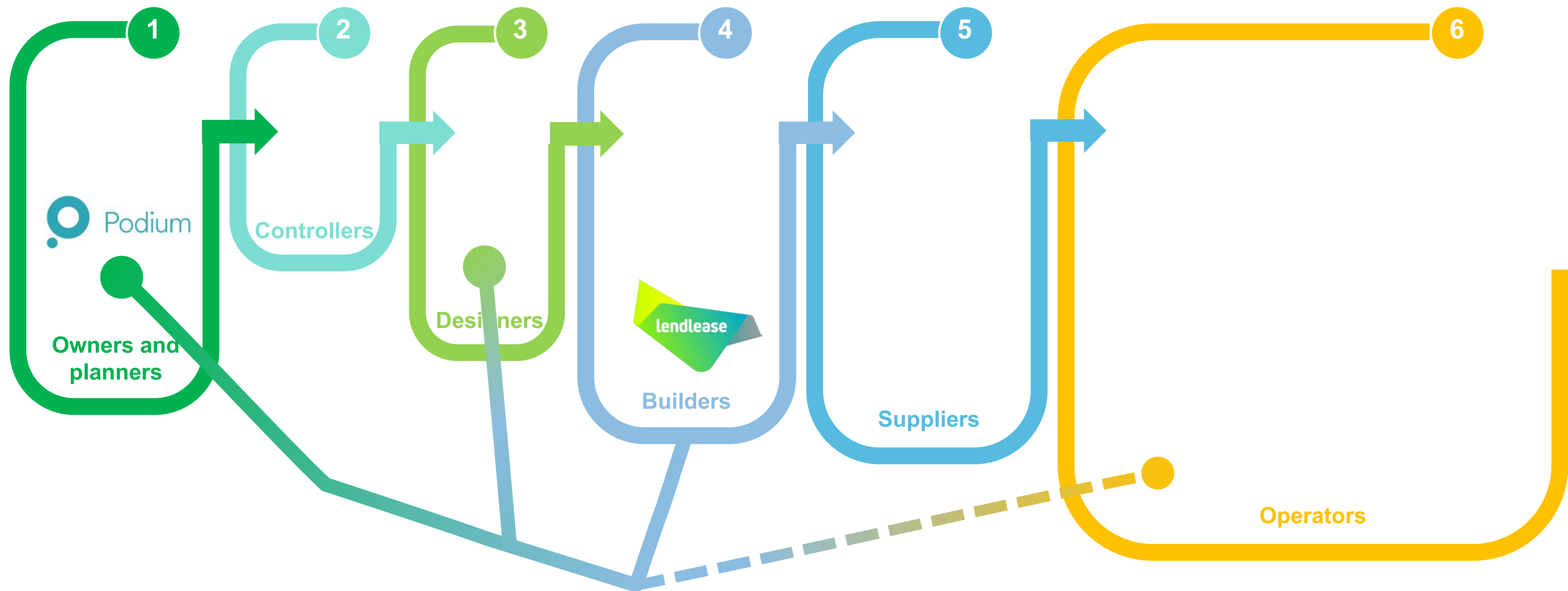
New Ventures – Conquest of New Markets



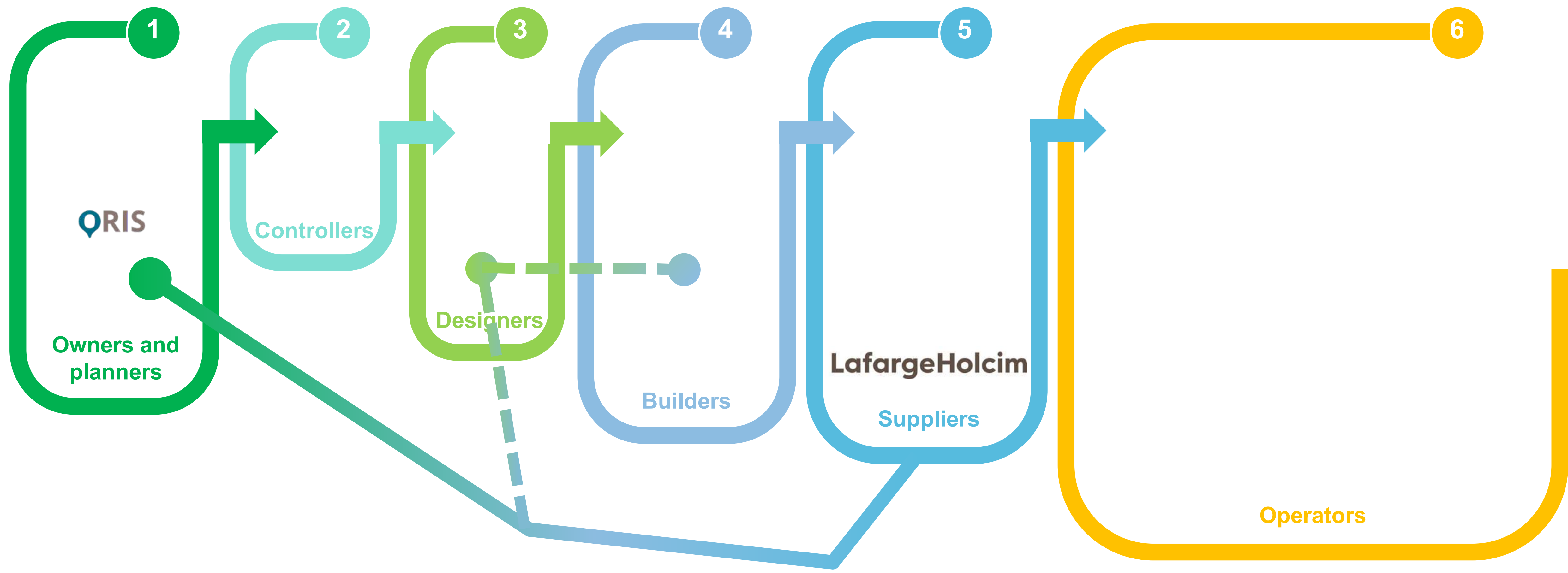
New Ventures – Conquest of New Markets



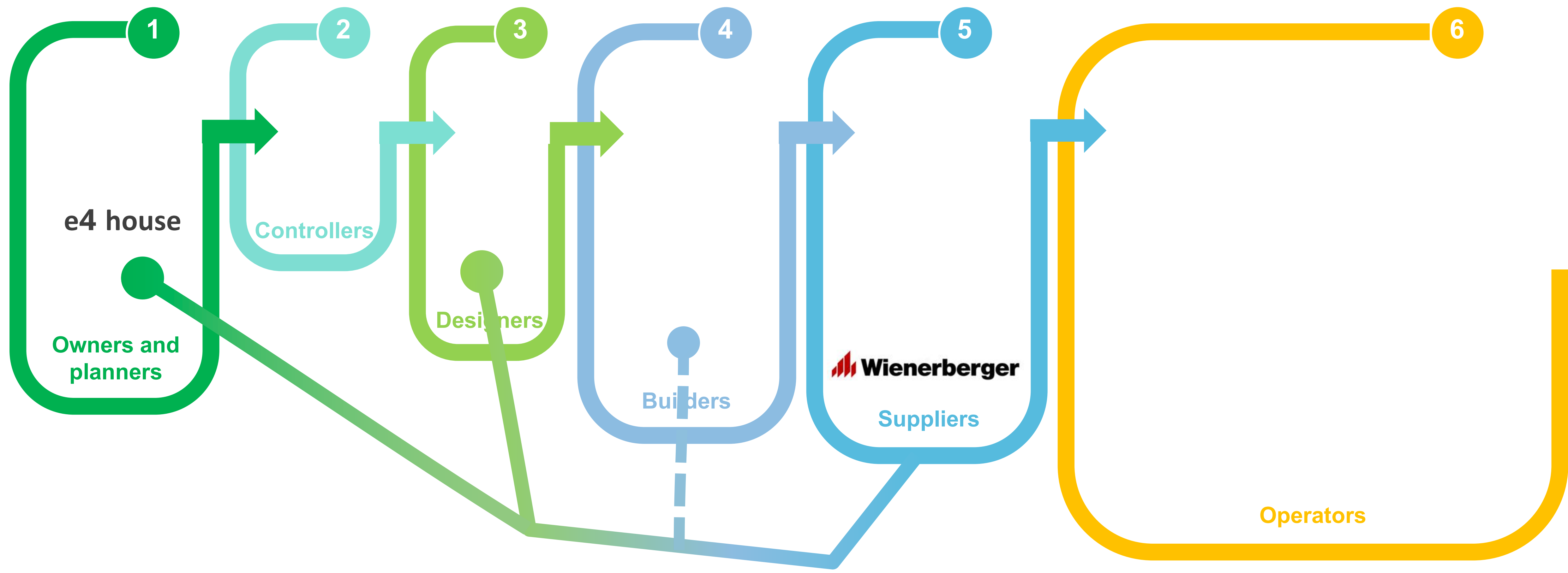
New Ventures – Conquest of New Markets



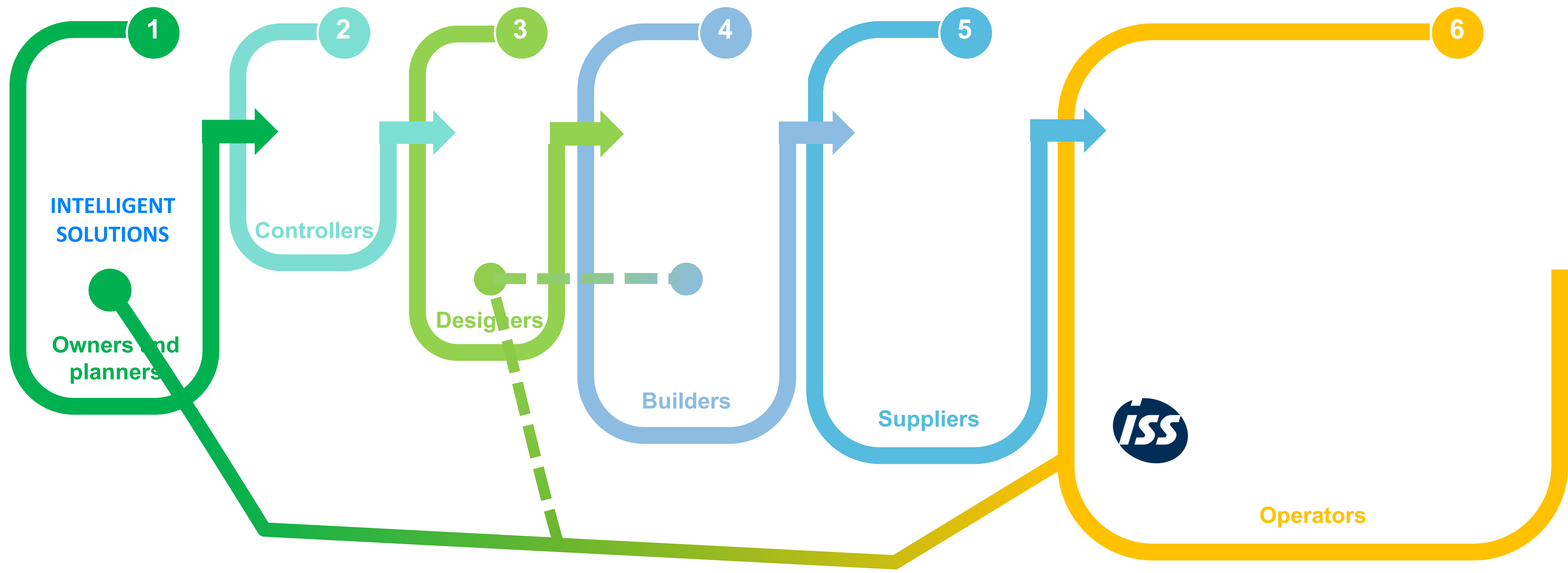
New Ventures – Conquest of New Markets



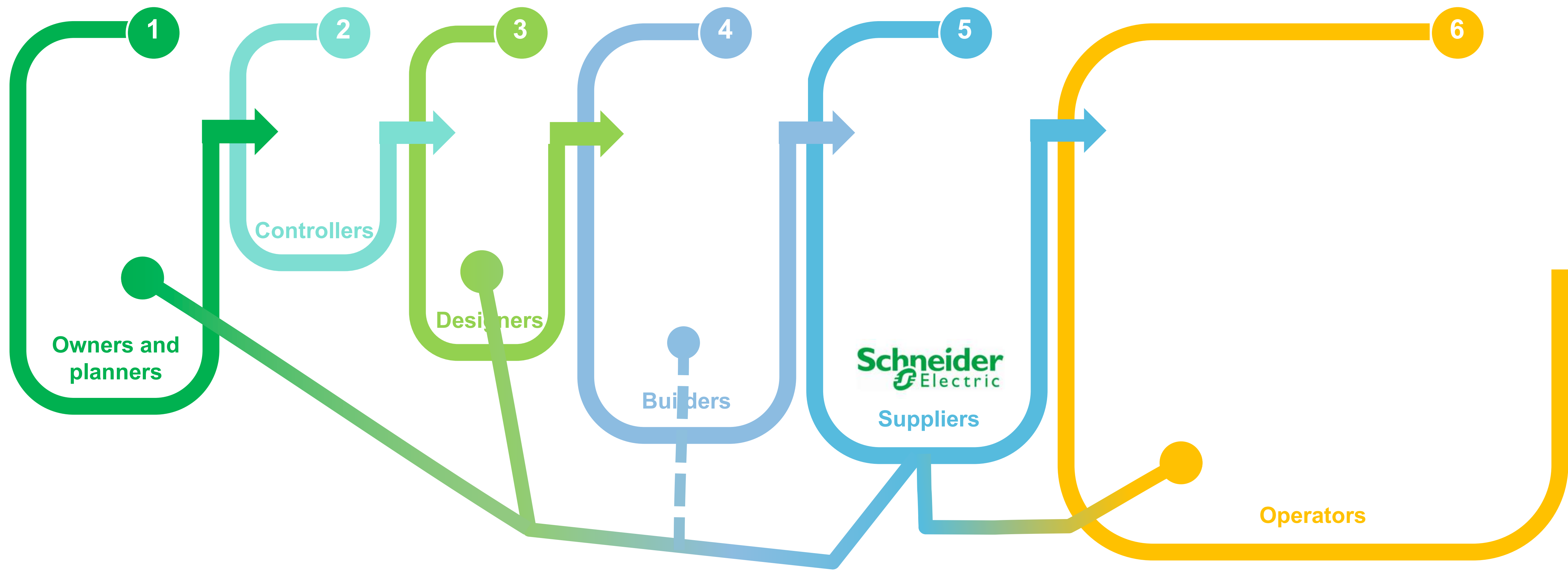
New Ventures – Conquest of New Markets

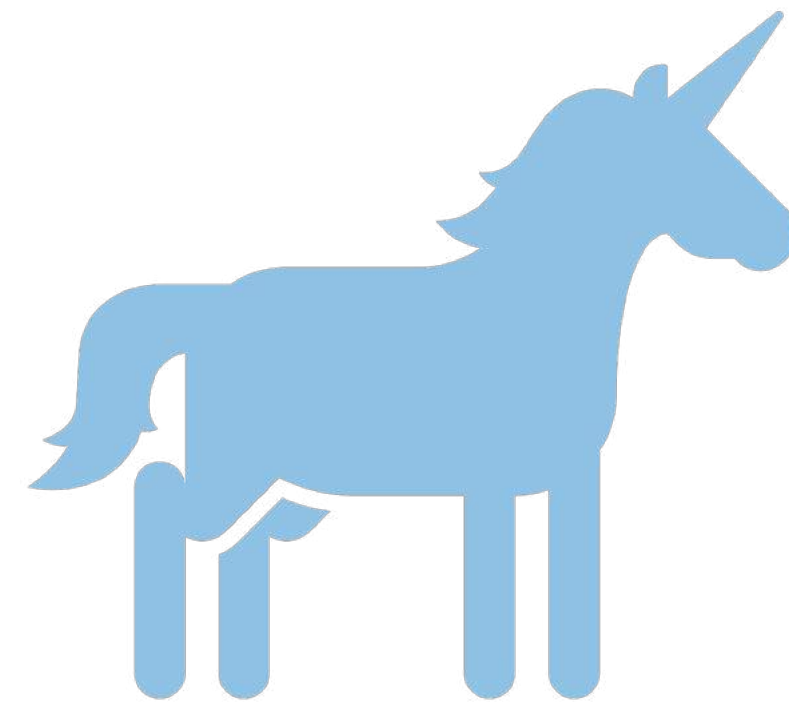


New Ventures – Conquest of New Markets



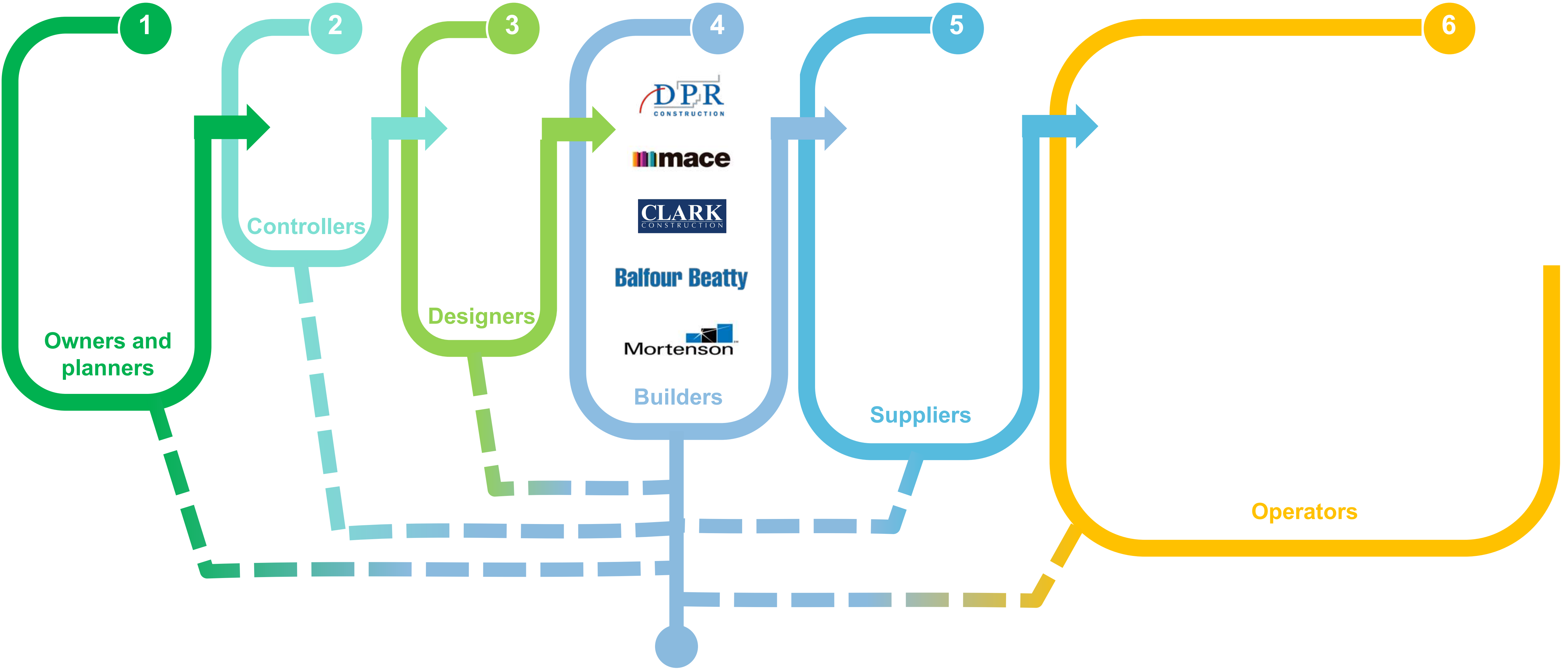
New Ventures – Conquest of New Markets

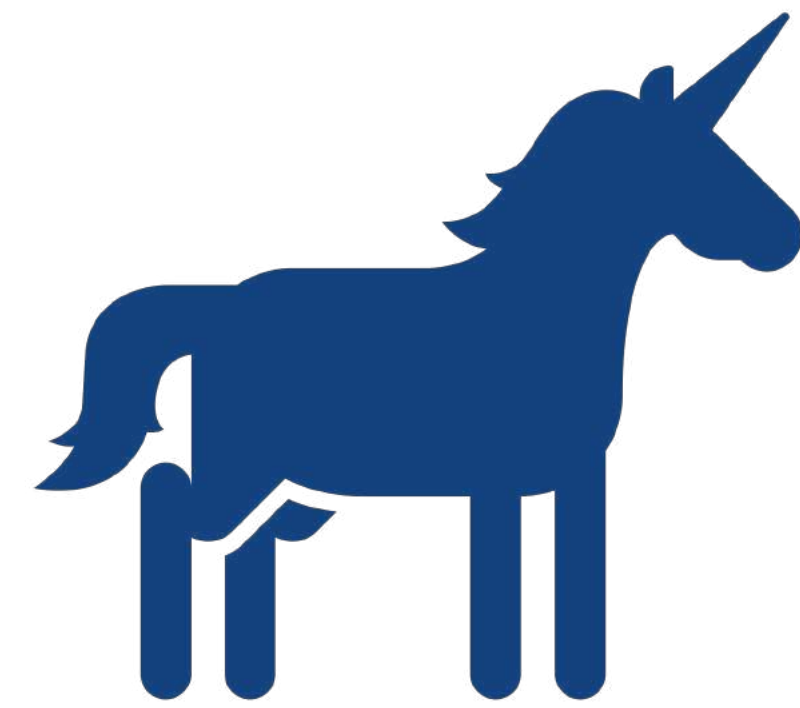




Industrialization

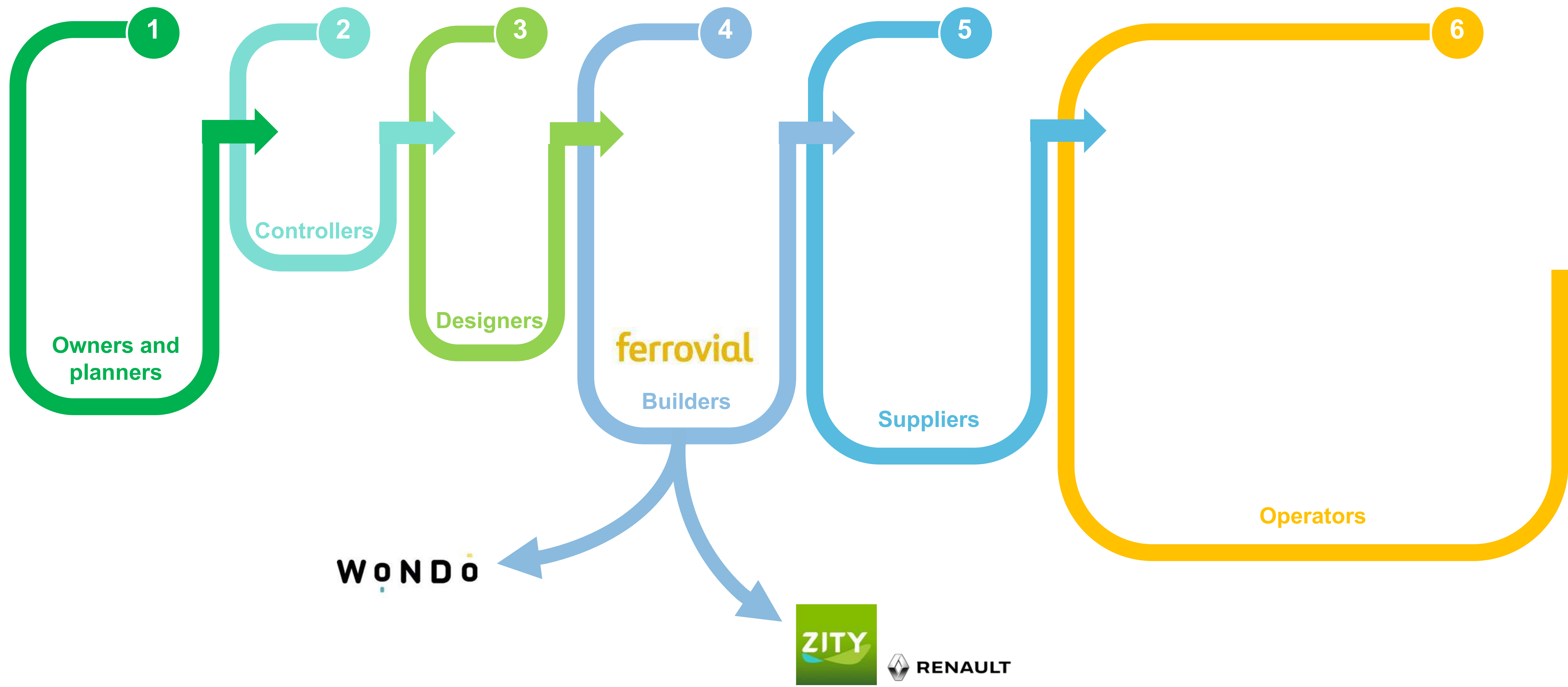
New Ventures – Industrialization



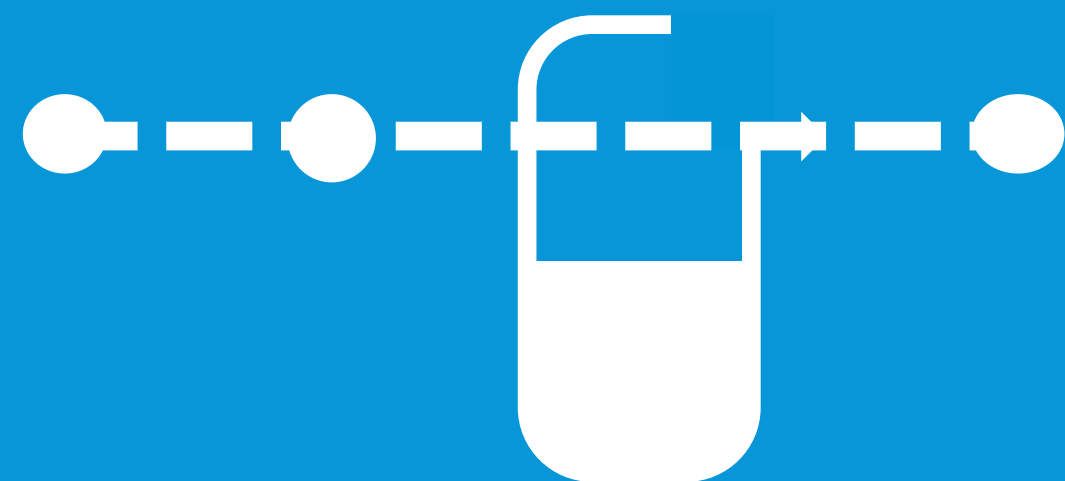


Leaving AEC

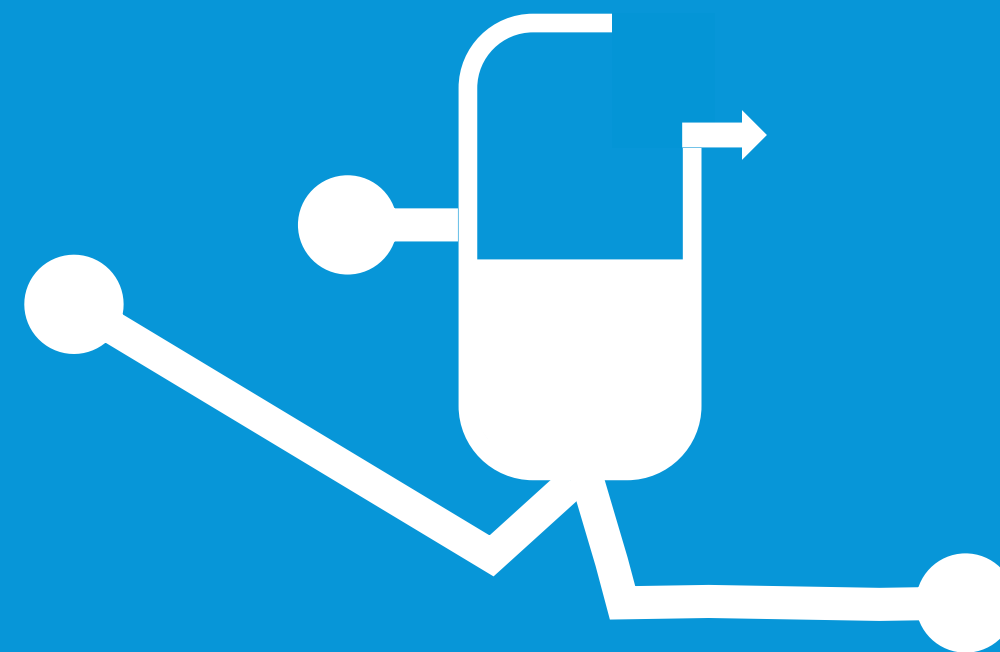
New Ventures – Leaving AEC



Acquisitions

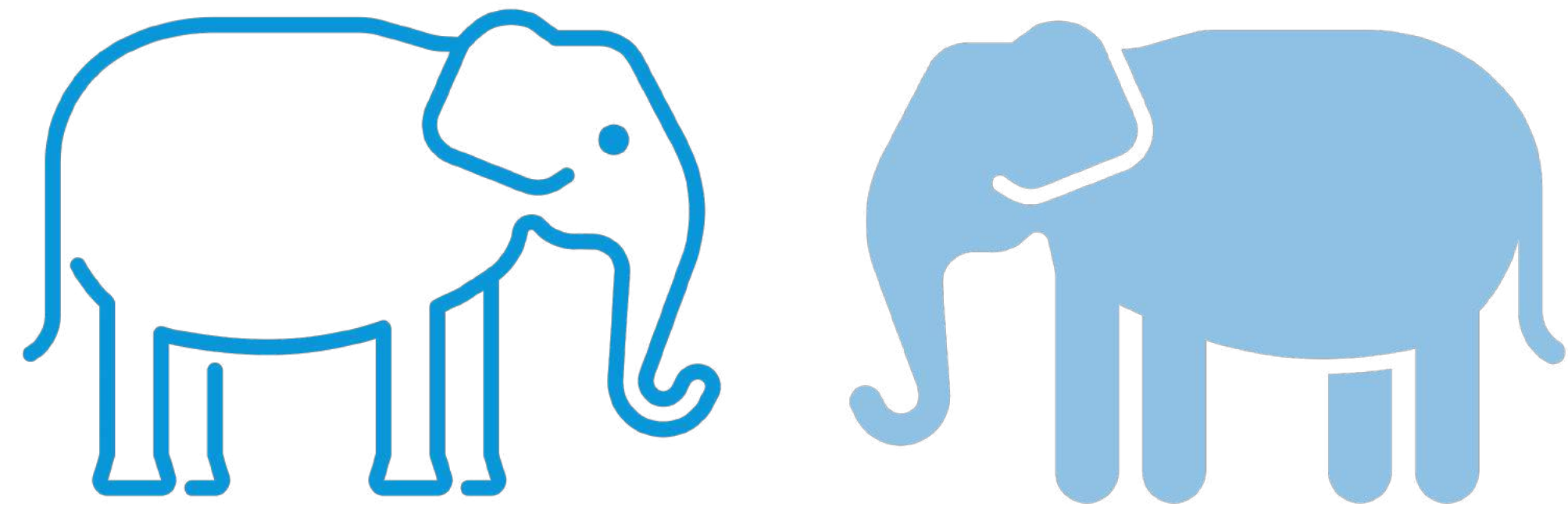


New Ventures



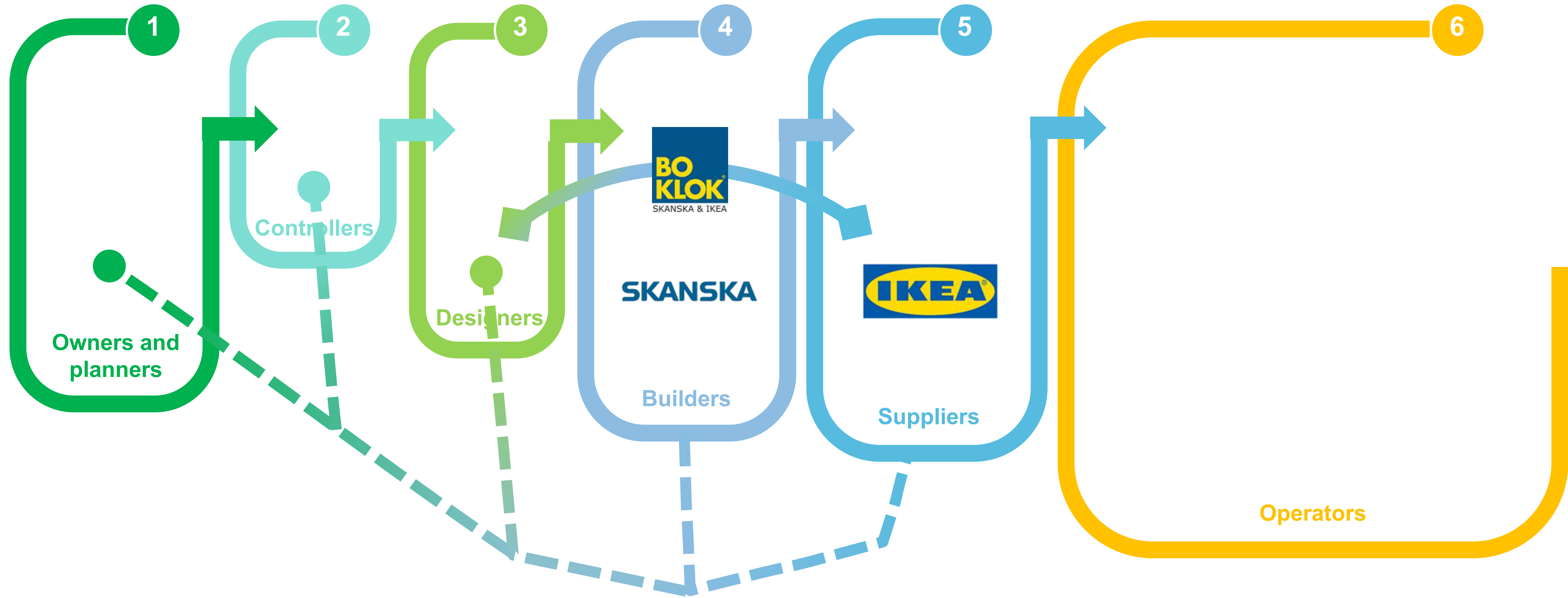
Alliances



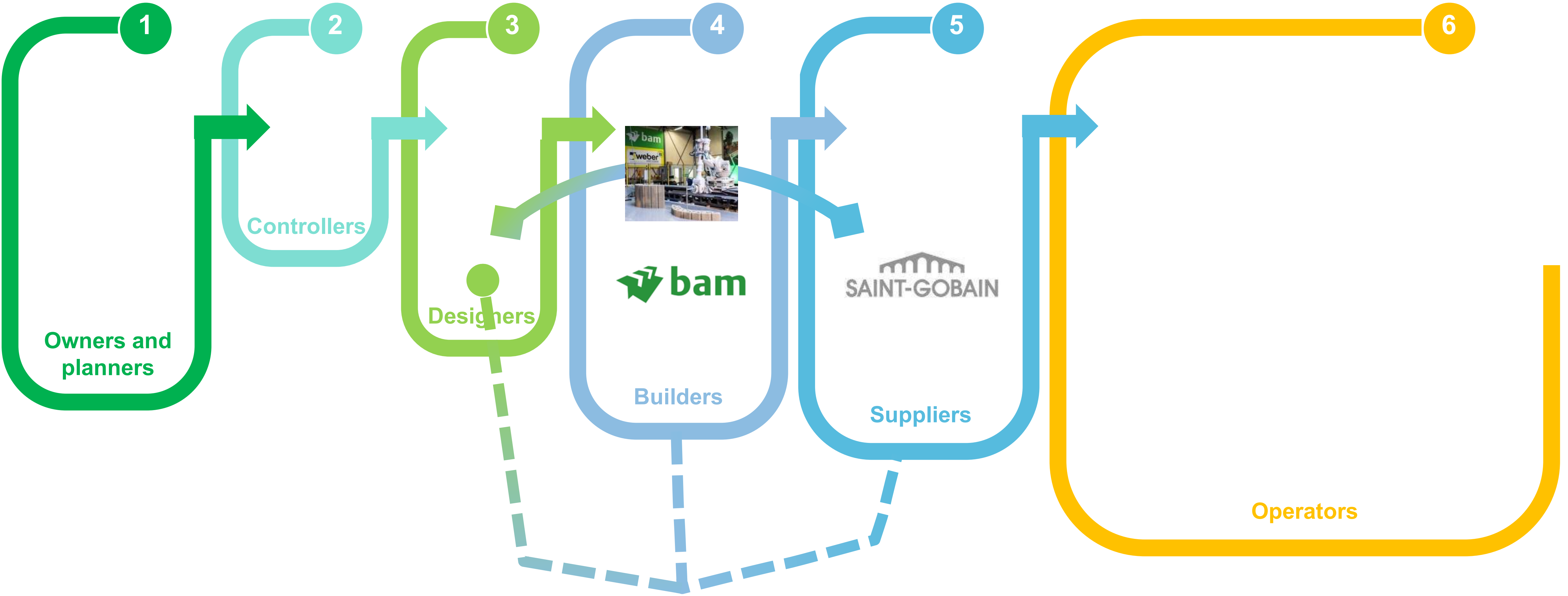


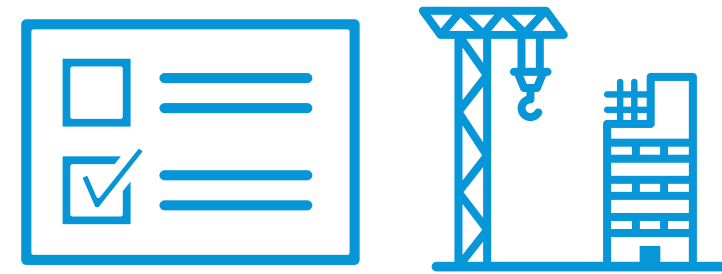
2 Elephants

Alliances



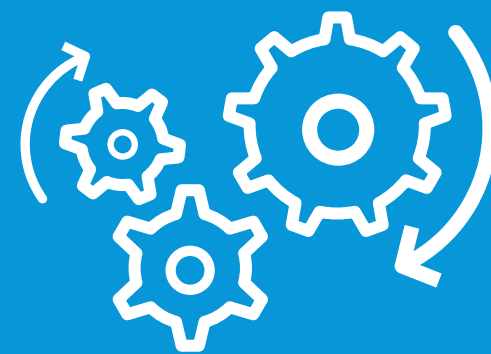
Alliances





Processes
and Operations

2



Business
Models

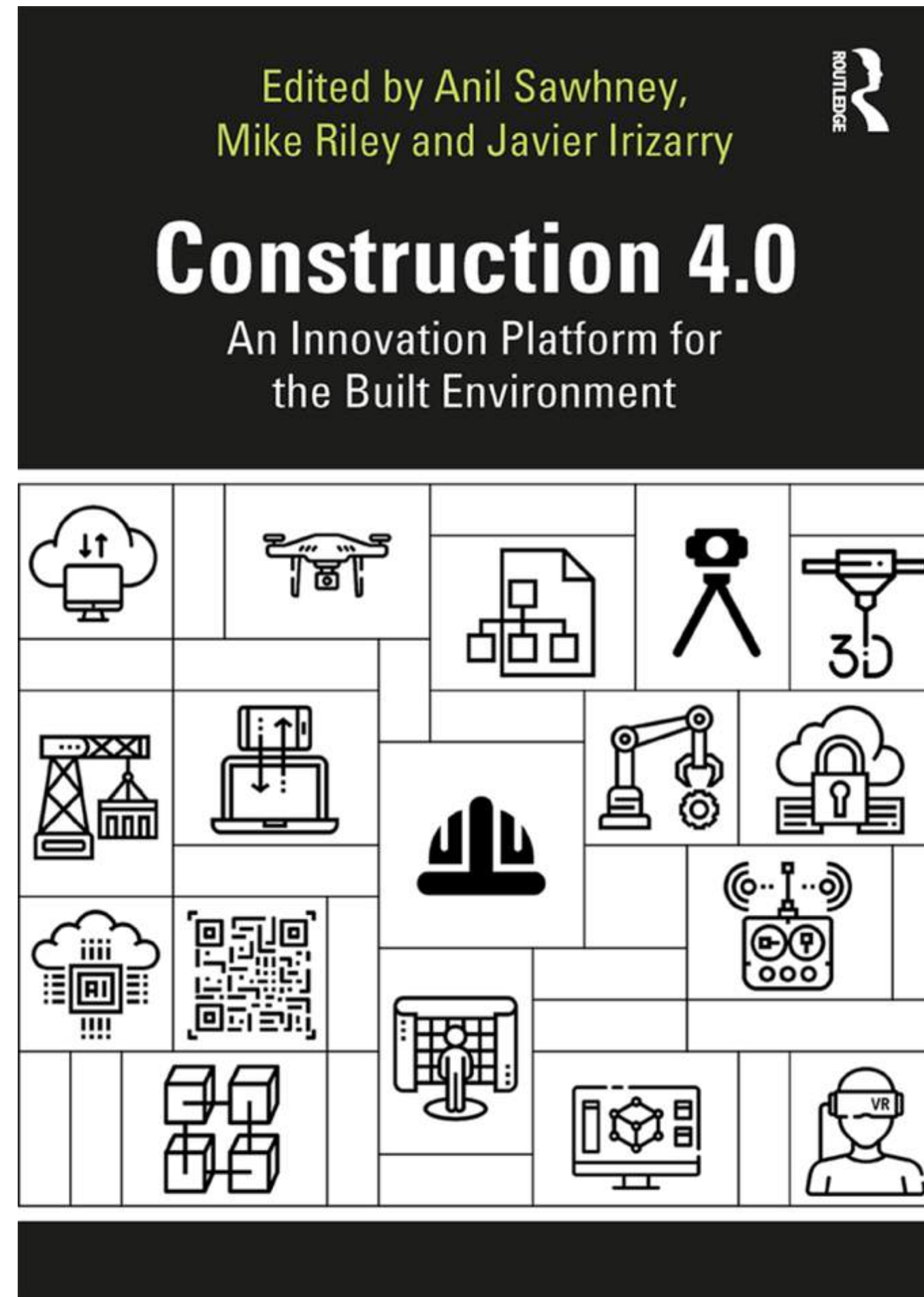
WHO IS DOING WHAT?

Radical Changes in Business Ecosystems

THE END GAME

Tomorrow's Value Chain and Ecosystems

Construction 4.0



February 2020

ENCORD



March 2020

ENCORD



In the End,
What will the Industry
Value Chain and Ecosystems
look like?

We do not know.

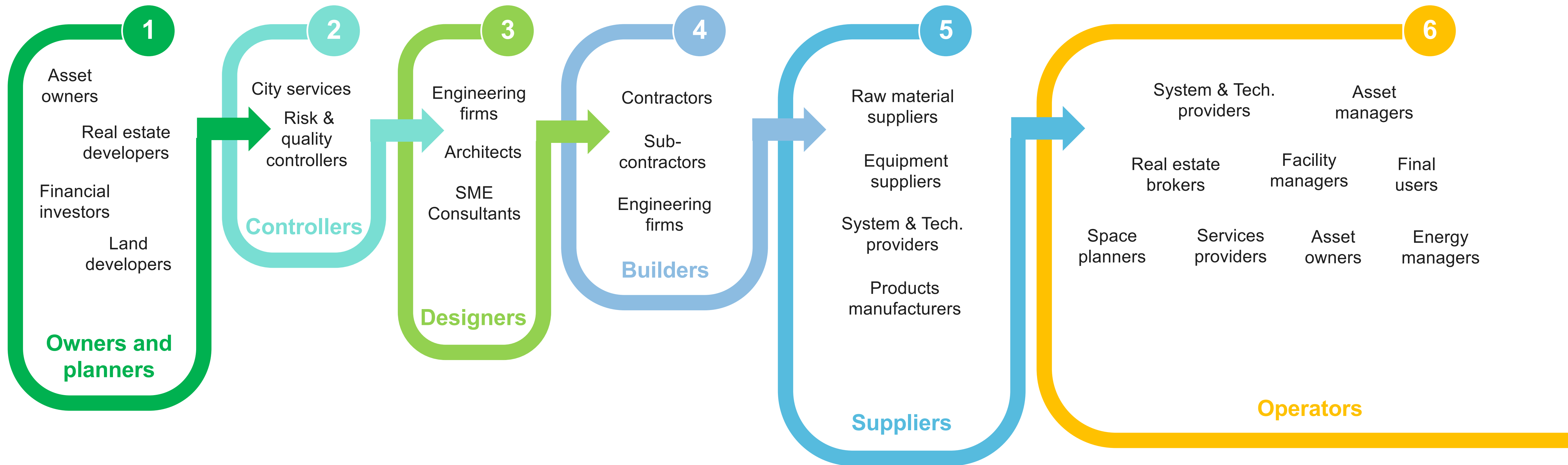
But let's try something.

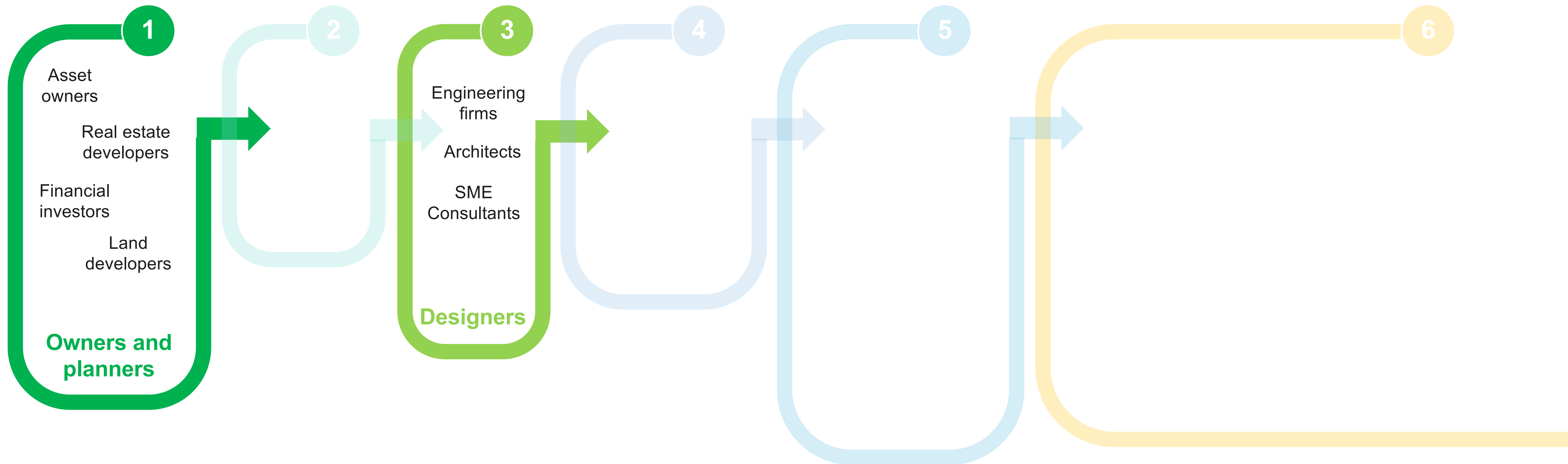
Let's try
to visualize
the emergence of
new ecosystems.

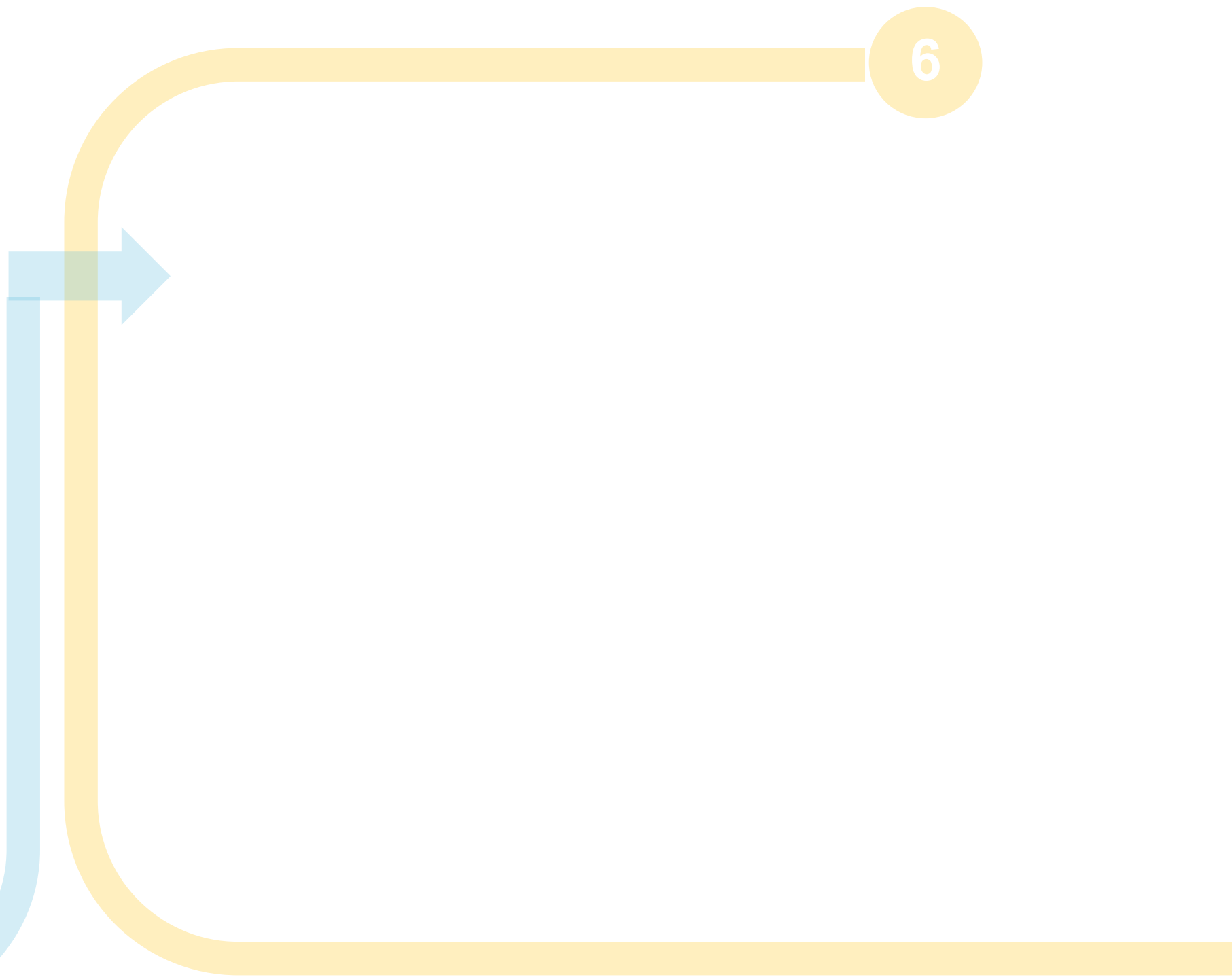
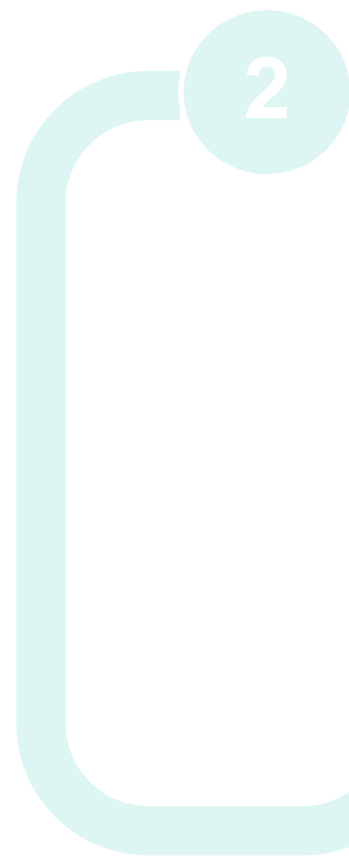
Here is what we can predict:

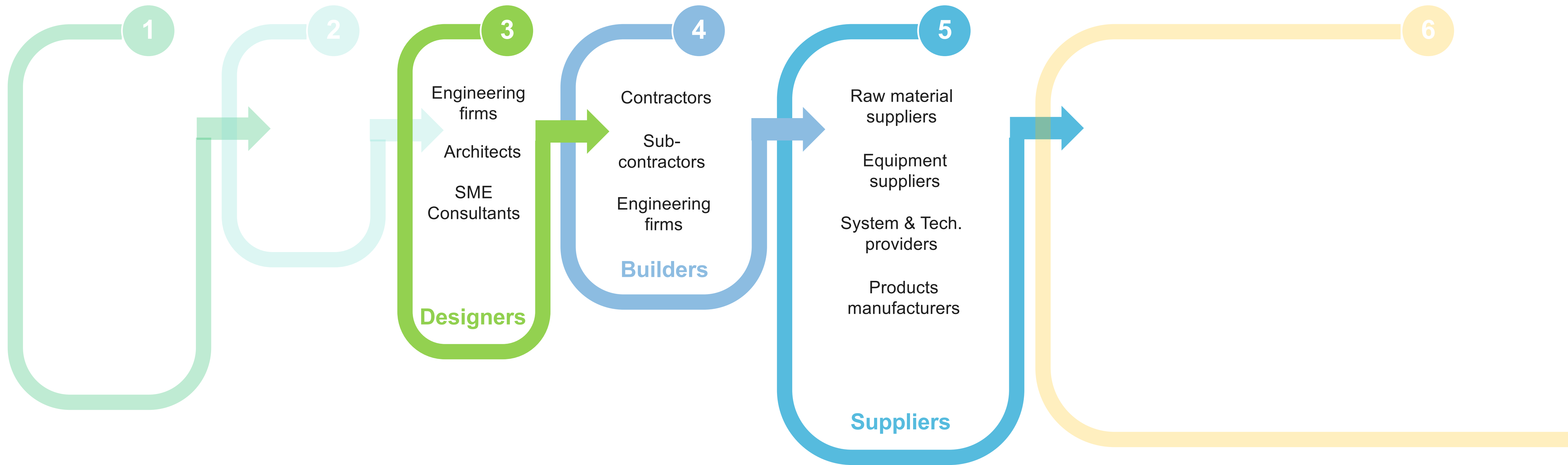
- Boundaries between silos and categories we know will progressively disappear.
- Hybrid players will gain importance.
- Diversification of Business Models will be the new normal.

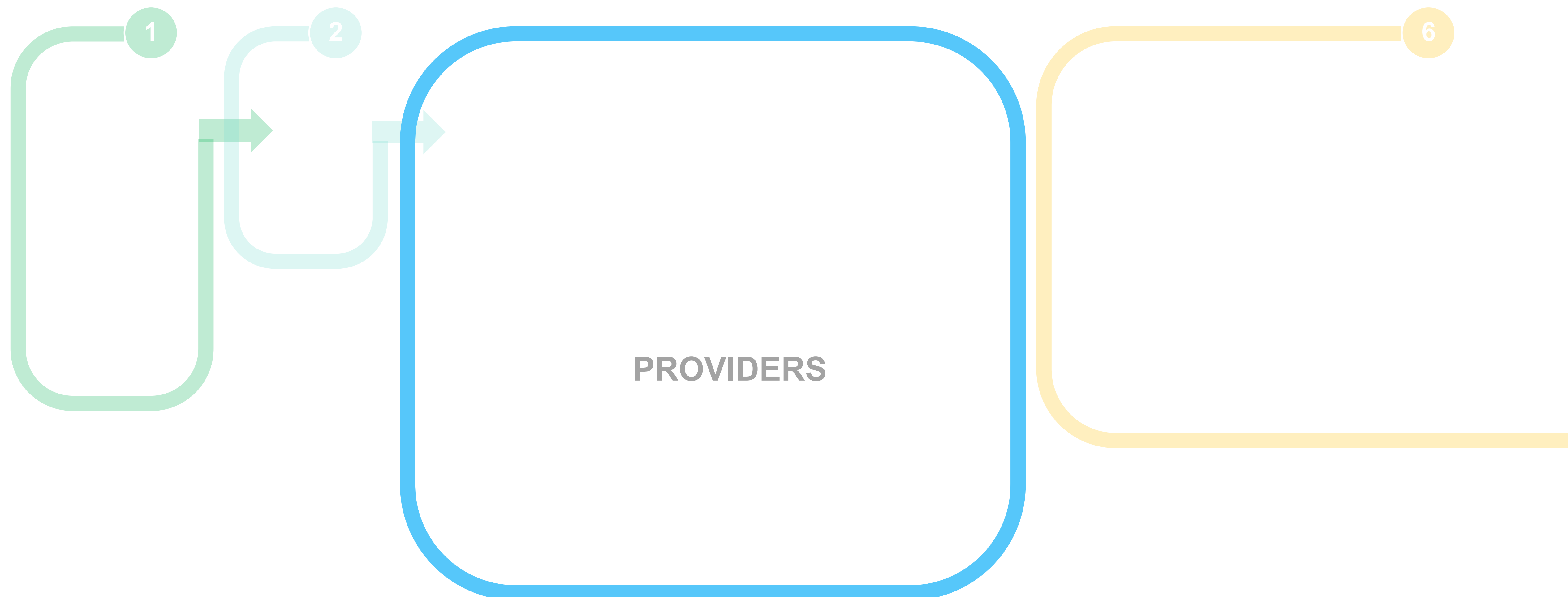
First,
let's look at
some convergence.

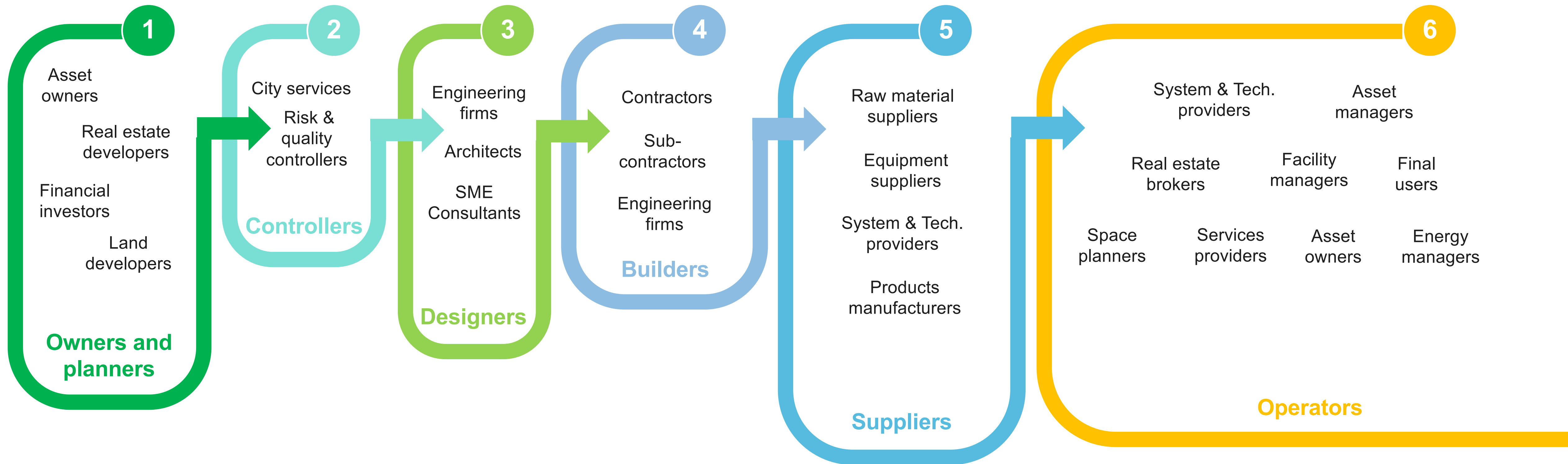




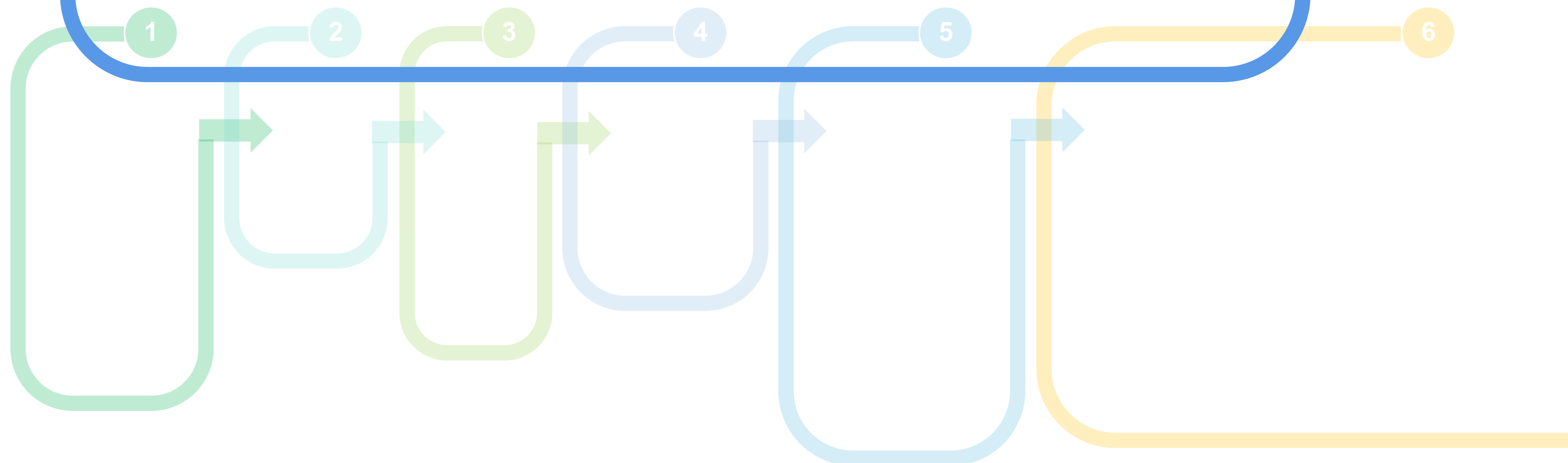




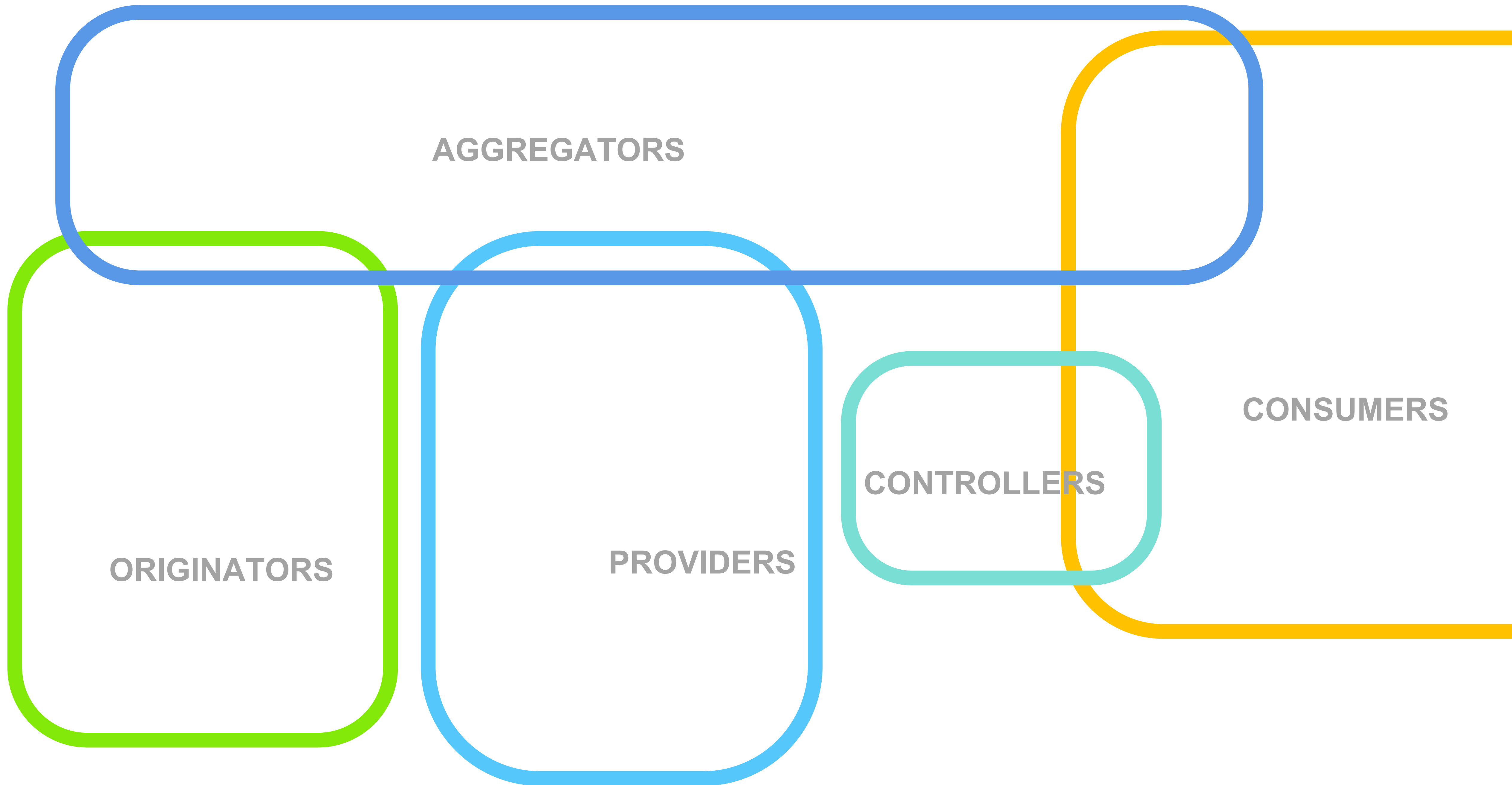




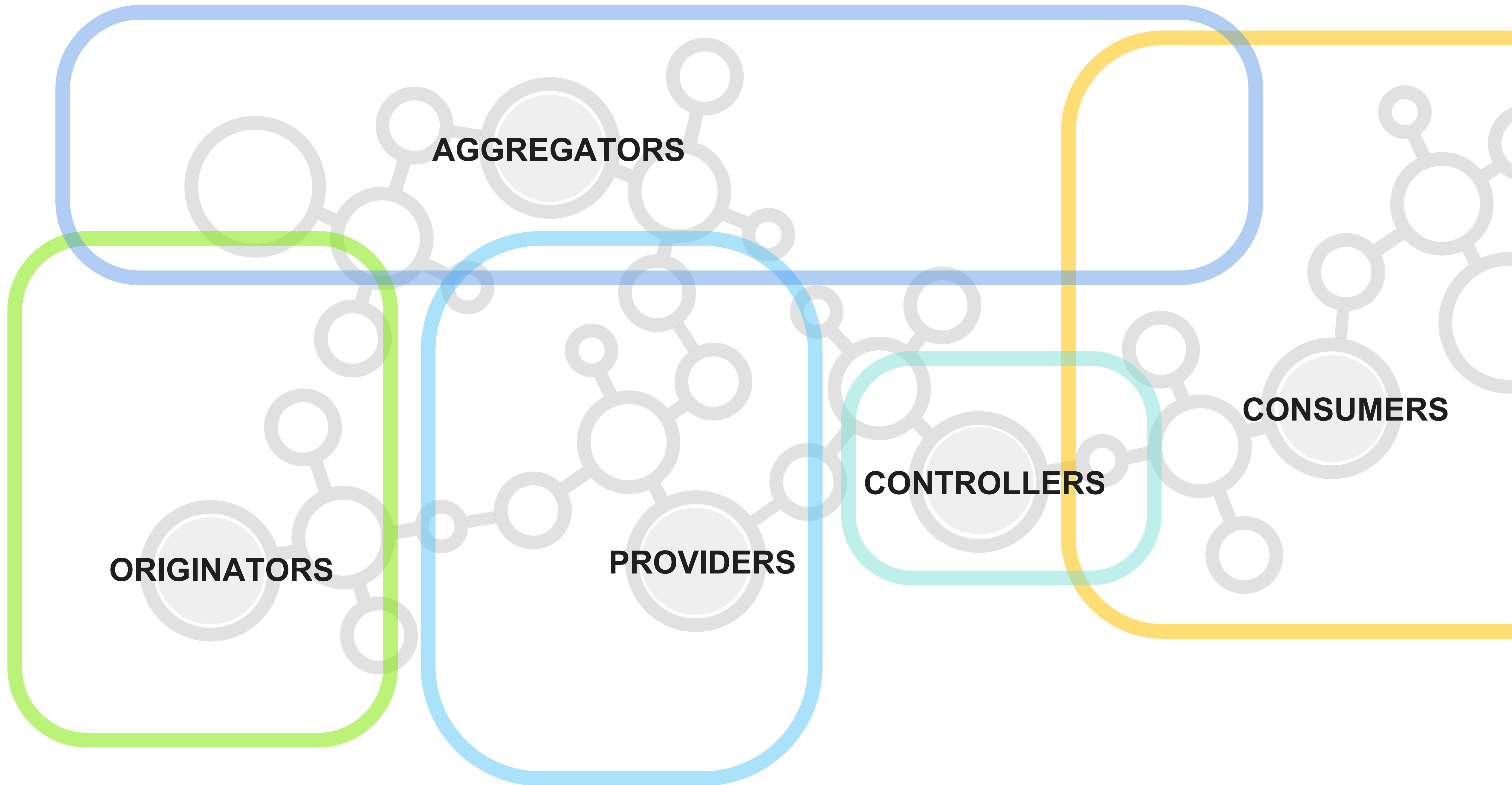
AGGREGATORS

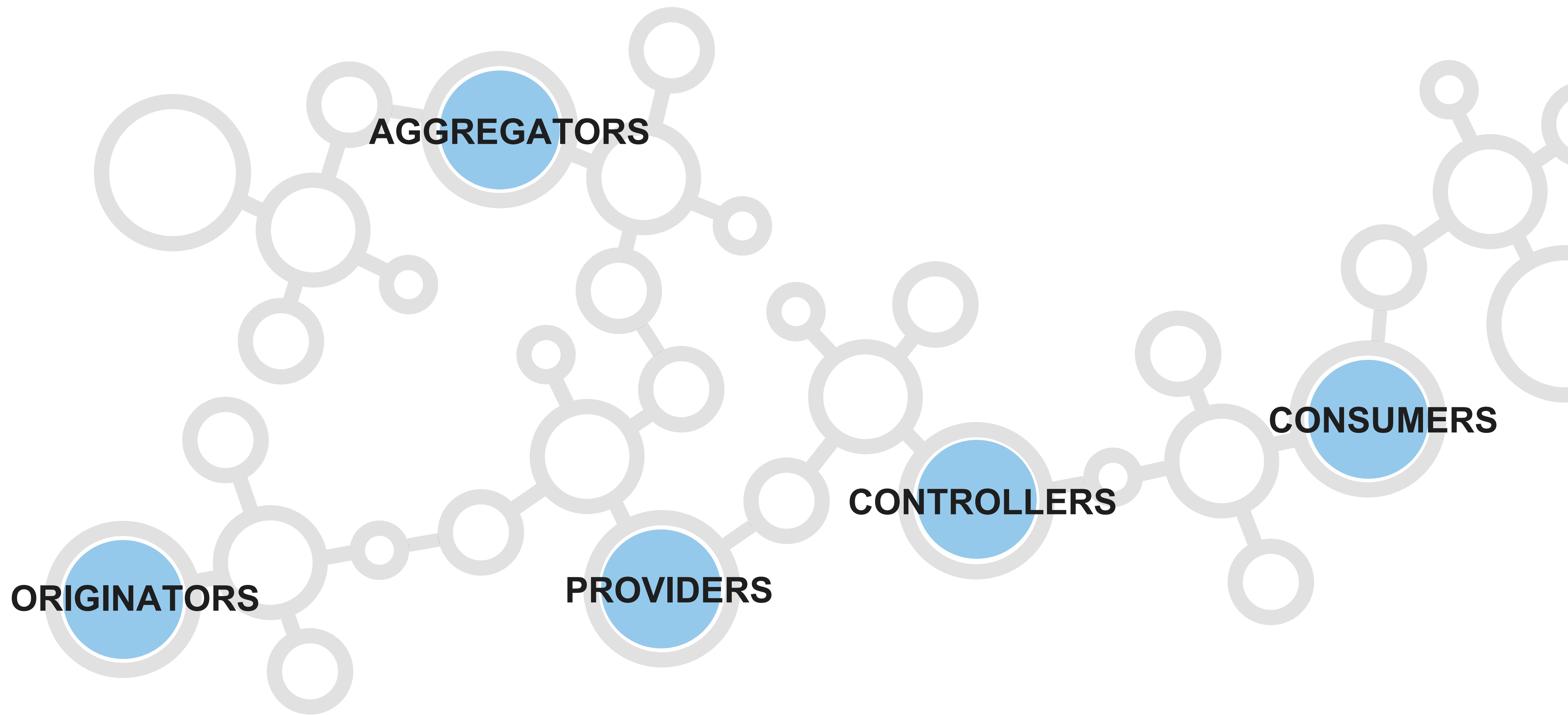


Now,
let's assemble
the pieces.



But things
are more
complex.







Daily
Activities

3



Culture and
behaviors

THE FUTURE OF WORK

New Roles, New Activities, New Terminologies

THE REINVENTION OF YOUR BUSINESS

Doing the right things, at the right time

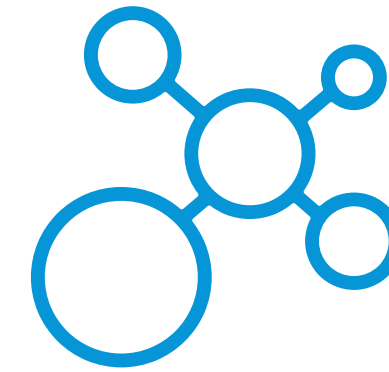
The Future of Work



New Roles

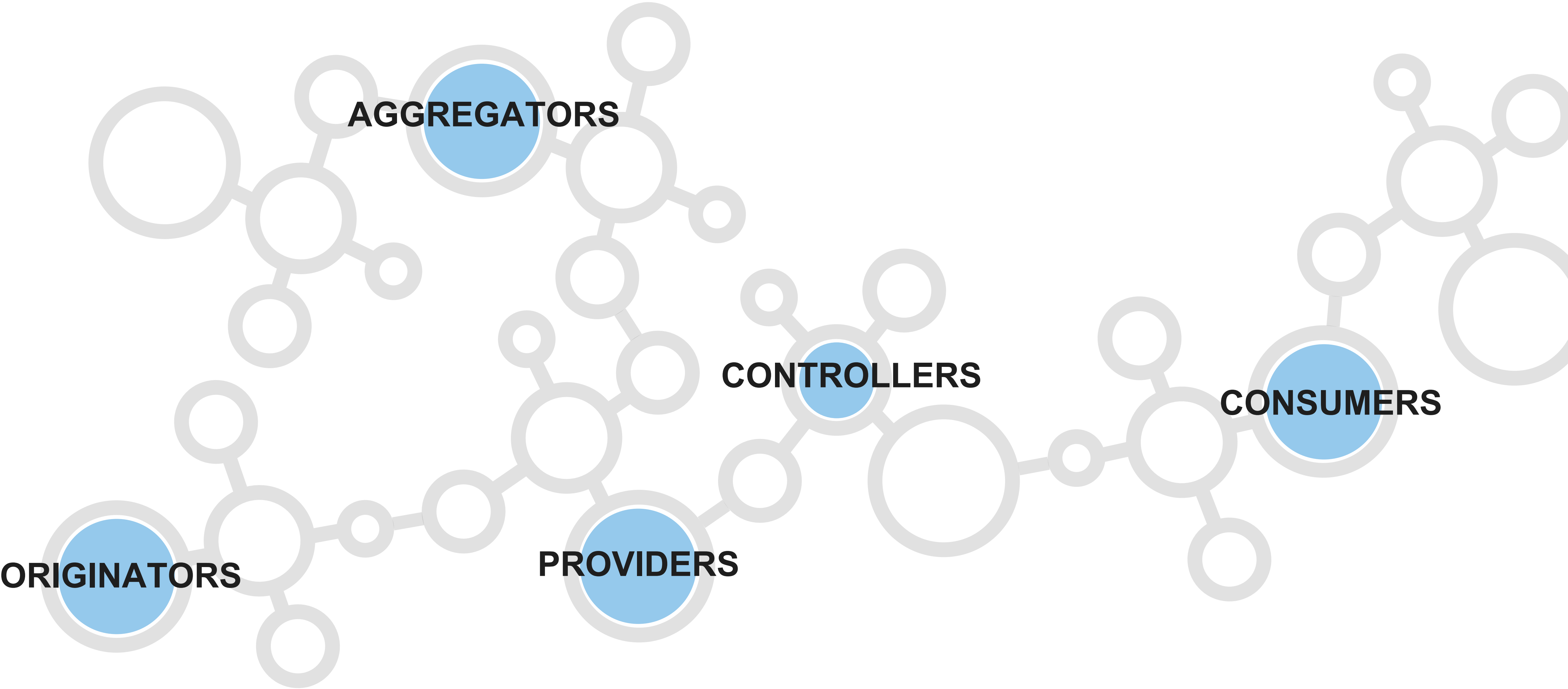


New Activities



New Terminologies

New Terminologies



"In today's era of volatility, there is no other way but to re-invent. The only sustainable advantage you can have over others is agility, that's it. Because nothing else is sustainable, everything else you create, somebody else will replicate."

Jeff Bezos, Founder of Amazon



Daily
Activities

3



Culture and
behaviors

THE FUTURE OF WORK

New Roles, New Activities, New Terminologies

THE REINVENTION OF YOUR BUSINESS

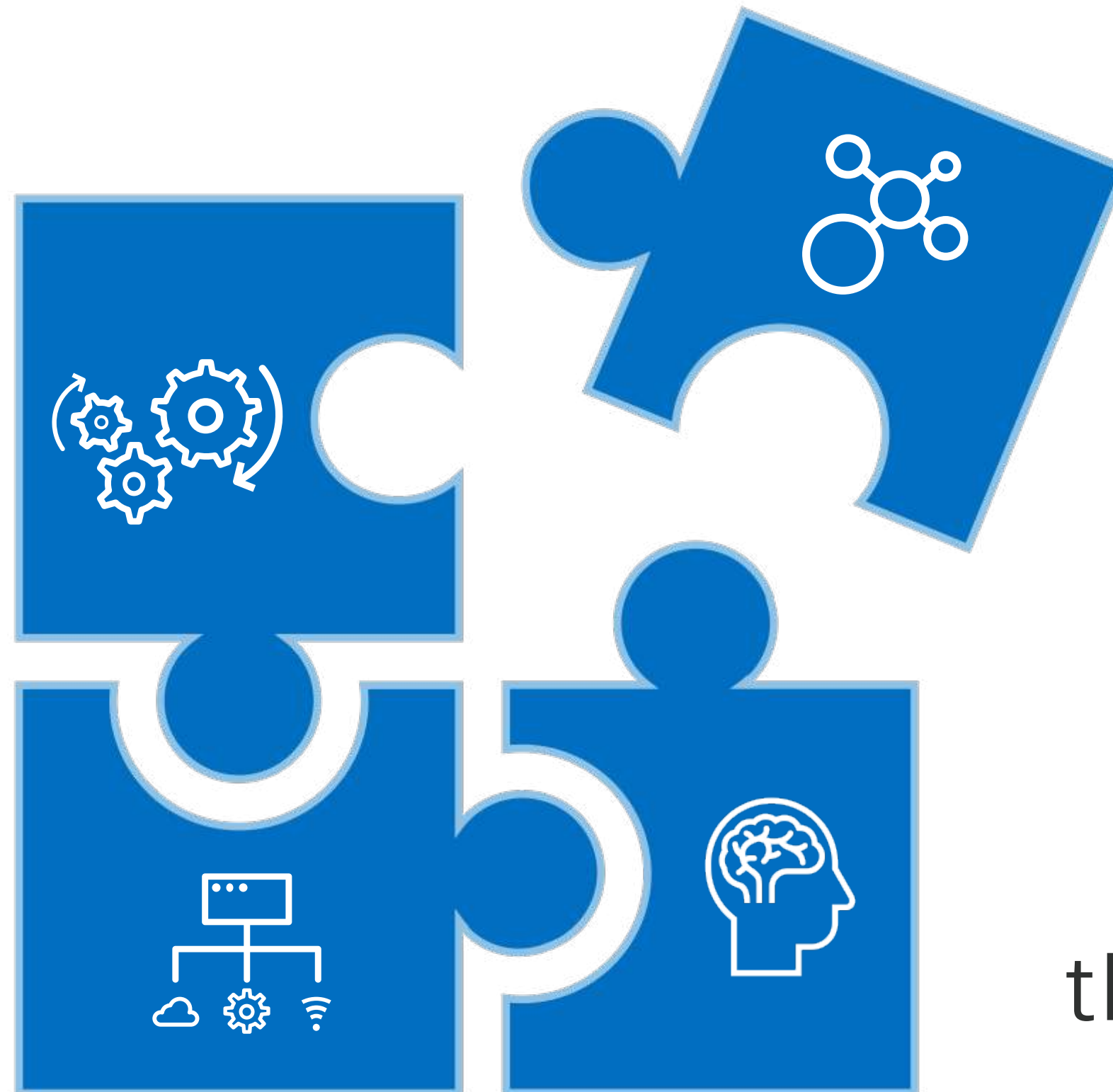
Doing the right things, at the right time

It is not a question of “if”
your company
should take on
a digital transformation,
but “how”

Doing the right things, at the right time

Building
the **right** business model

Building
the **right** platform



Building
the **right** ecosystem

Building
the **right** culture

How can we help?

Here are 2 catalysts of your transformation



Arc of Transformation Program

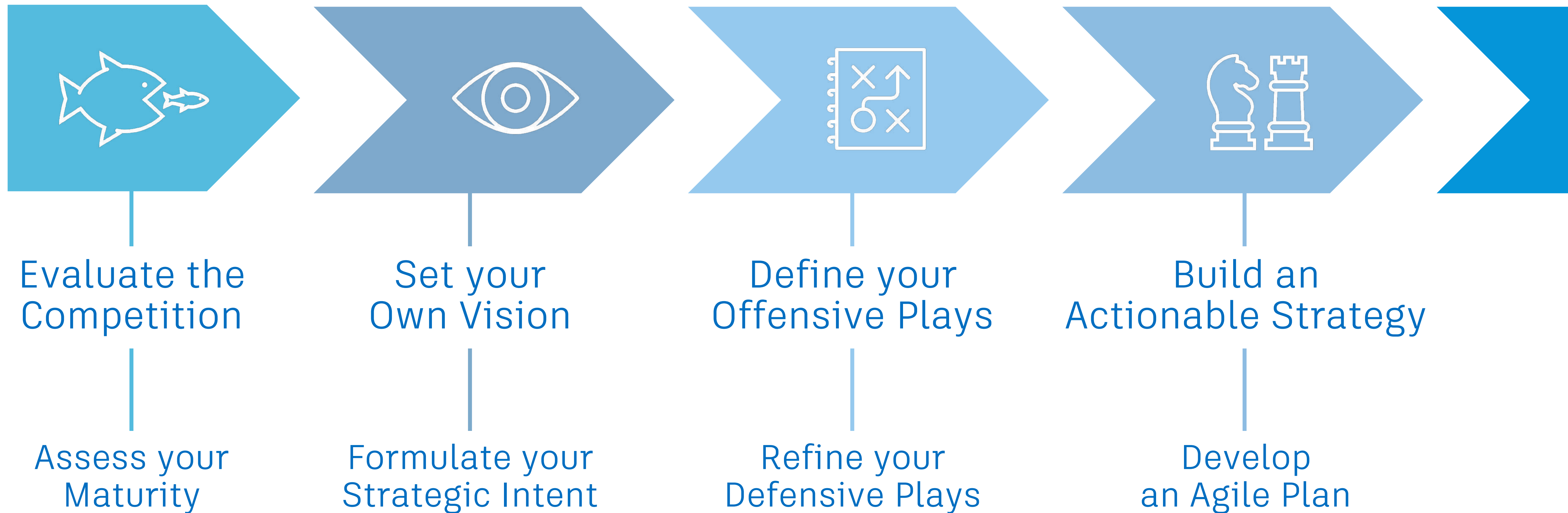
Set a vision
and a strategy



Industry Outcome Framework

Build defensive
and offensive capabilities

If you want to Play Offense, what is the best “sequence of events”?



"You must always realize that the line of progress is never a straight line. It always has its dips and curves, its meandering points. The hopeful thing is to keep moving."

Dr Martin Luther King, Where Do We Go From Here: Chaos or Community? (1969)



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