CRIOS
Center for Research on Innovation,
Organization and Strategy

R&D in Accelerated Processes – Pirelli and F1

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R&D and speed

Is organizational speed a valuable asset?

Why?

And why is it difficult to be fast?

In an increasingly turbulent environment, being fast is good

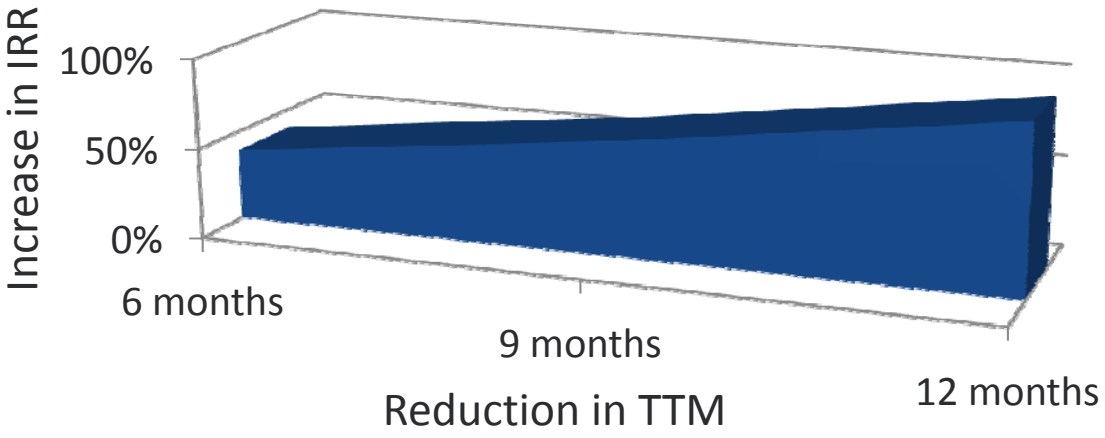
"Well in our country you'd generally get to somewhere else – if you ran very fast for a long time as we've been doing."

"A slow sort of country!" says the Queen. "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

L. Carroll

And it does pay off!

Increase in IRR due to reduction in Time-to-Market



Decrease in profit due to late entry

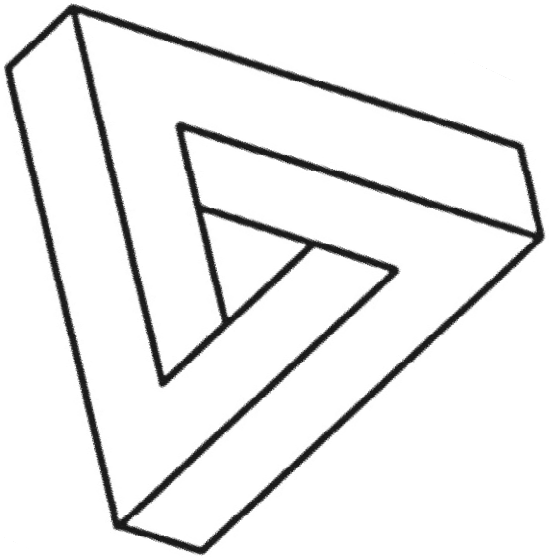
New products that come to market six months late, but on-budget

Earn 33% less profit than if they were on time

Sources: McKinsey, 1983; Douglass, 2011

But, unfortunately, there are trade-offs

Speed



Cost

Quality

You really care about quality and being fast?
Then you can always infuse more money into the project

Does it really work?

Money is not enough → Time-compression diseconomies

- Maintaining a given rate of investments produces a larger increase in the resource level than maintaining twice the investment rate over half the interval

- "MBA students may not accumulate the same stock of knowledge in a one-year course as in a two-year course, even if all inputs, except time, are doubled." (Cool et al., 2013)

Money is not enough → Time-compression diseconomies

- Maintaining a given rate of investments produces a larger increase in the resource level than maintaining twice the investment rate over half the interval
- Crash R&D programs are typically less effective than R&D programs where annual outlays are lower but spread over a proportionally longer period of time
  - ✓ Concurrent approach → more actions are taken without knowledge of prior steps
  - ✓ Concurrent activities → might multiply unnecessary trials
  - ✓ Limited information-processing capability

Sources: Chen et al., 2012; Cool et al., 2013; Scherer, 1967.

So far…

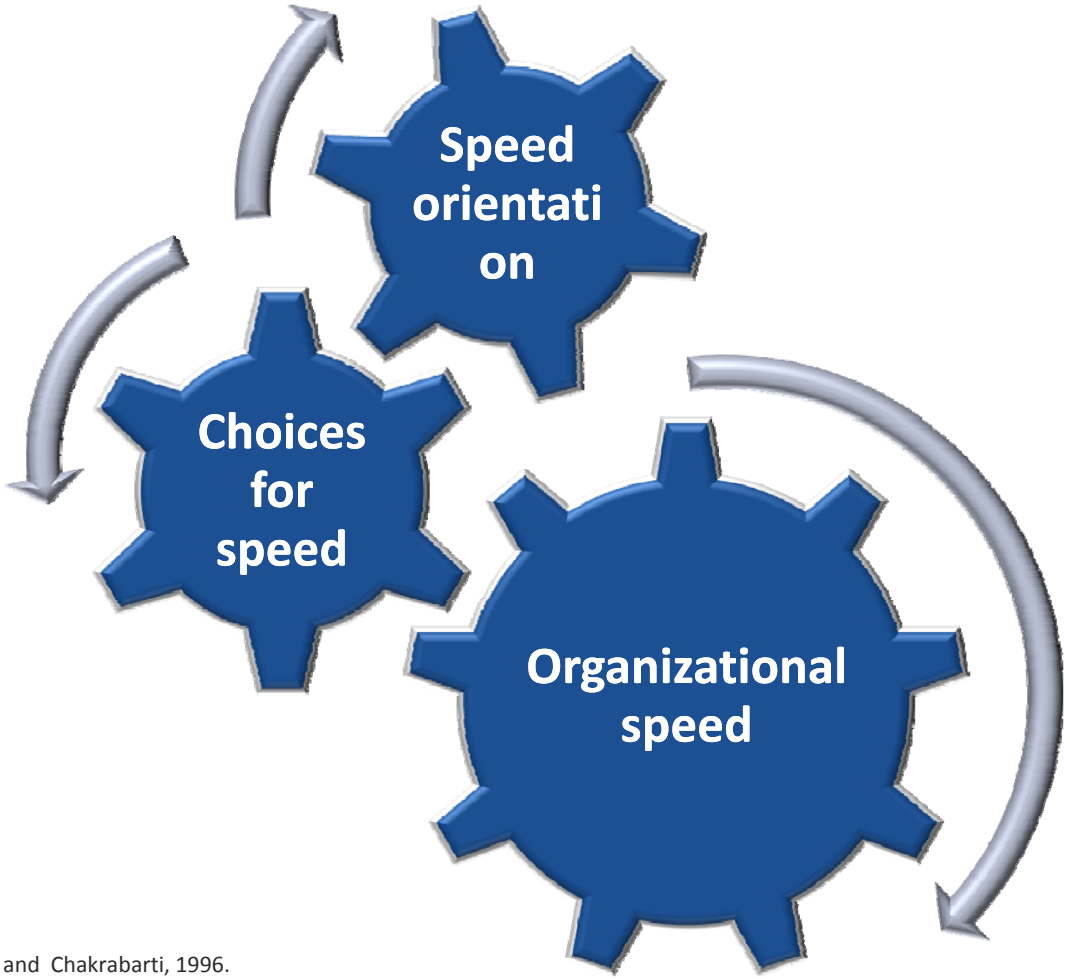
- Being fast is increasingly relevant and useful
- Yet being fast is difficult
- Pirelli succeeded in doing it

A case of success

What are the drivers of Pirelli's success?

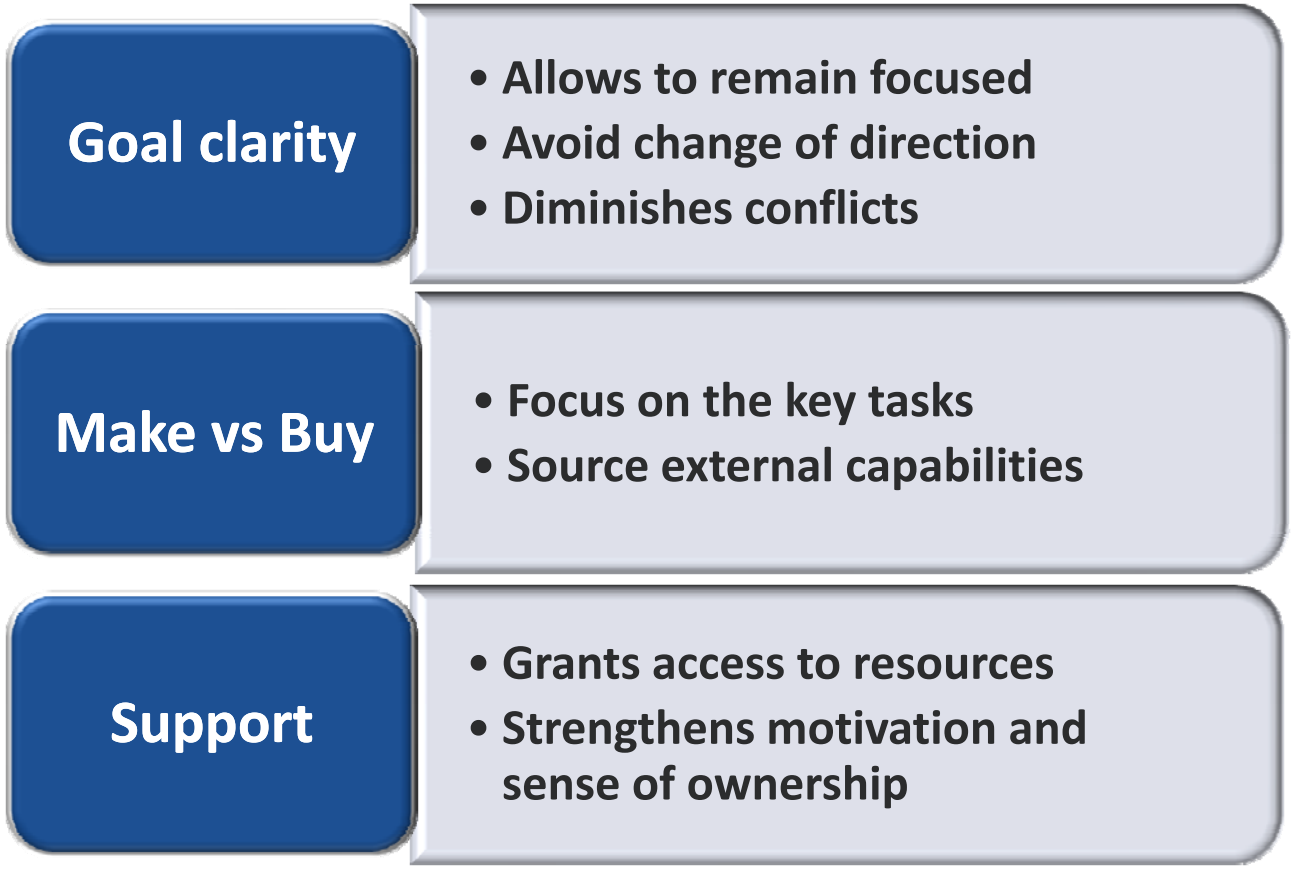
What are the key supporting choices?

Key drivers of organizational speed

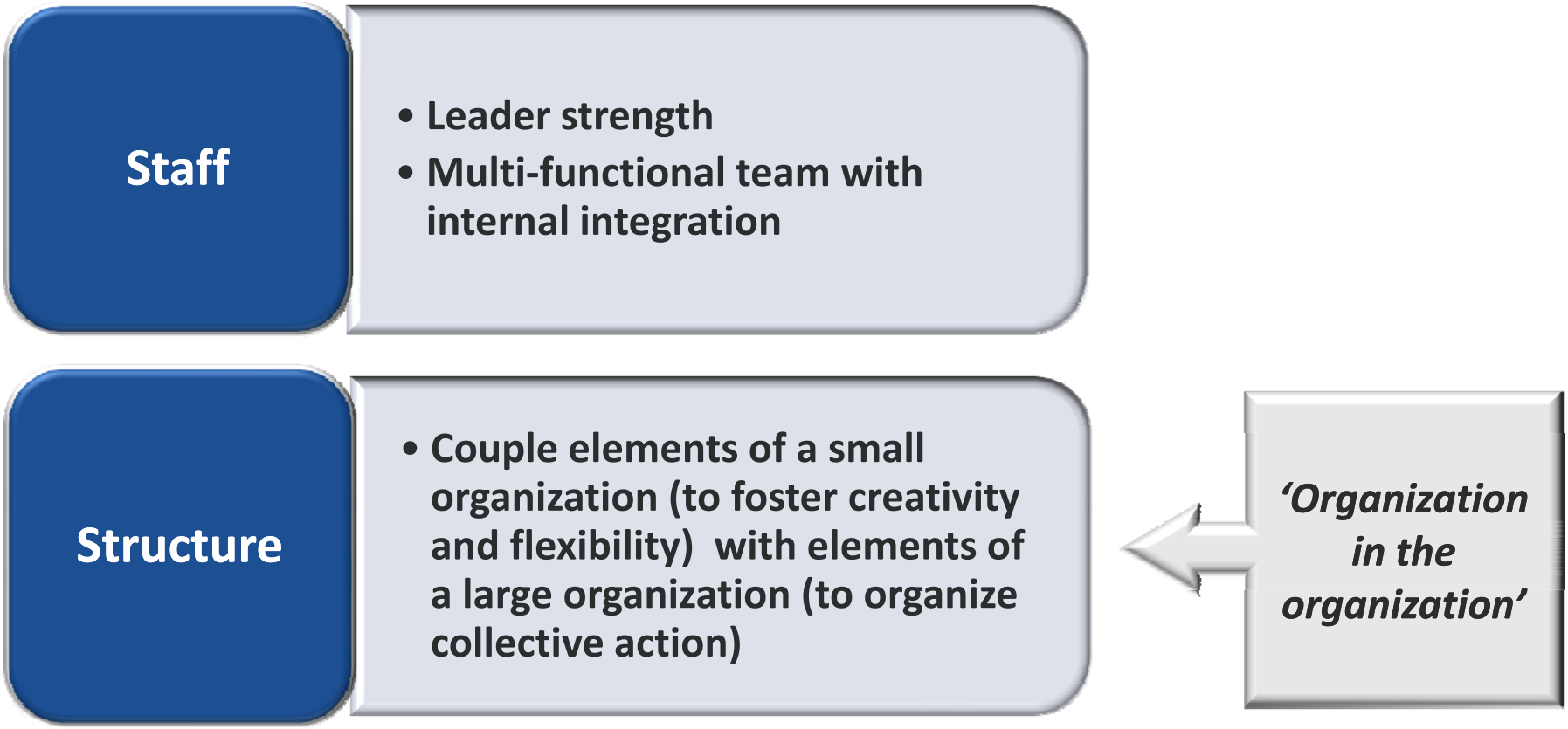


Sources: Adapted from Kessler and Chakrabarti, 1996.

Speed orientation

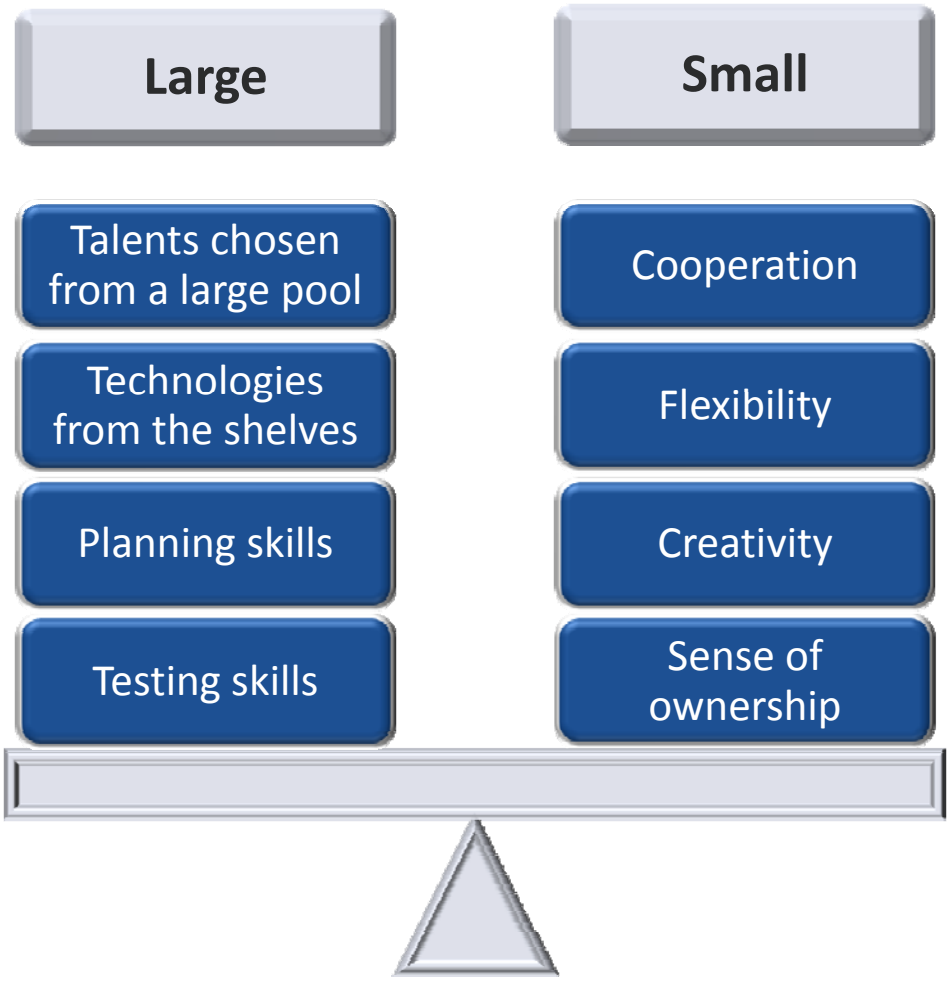


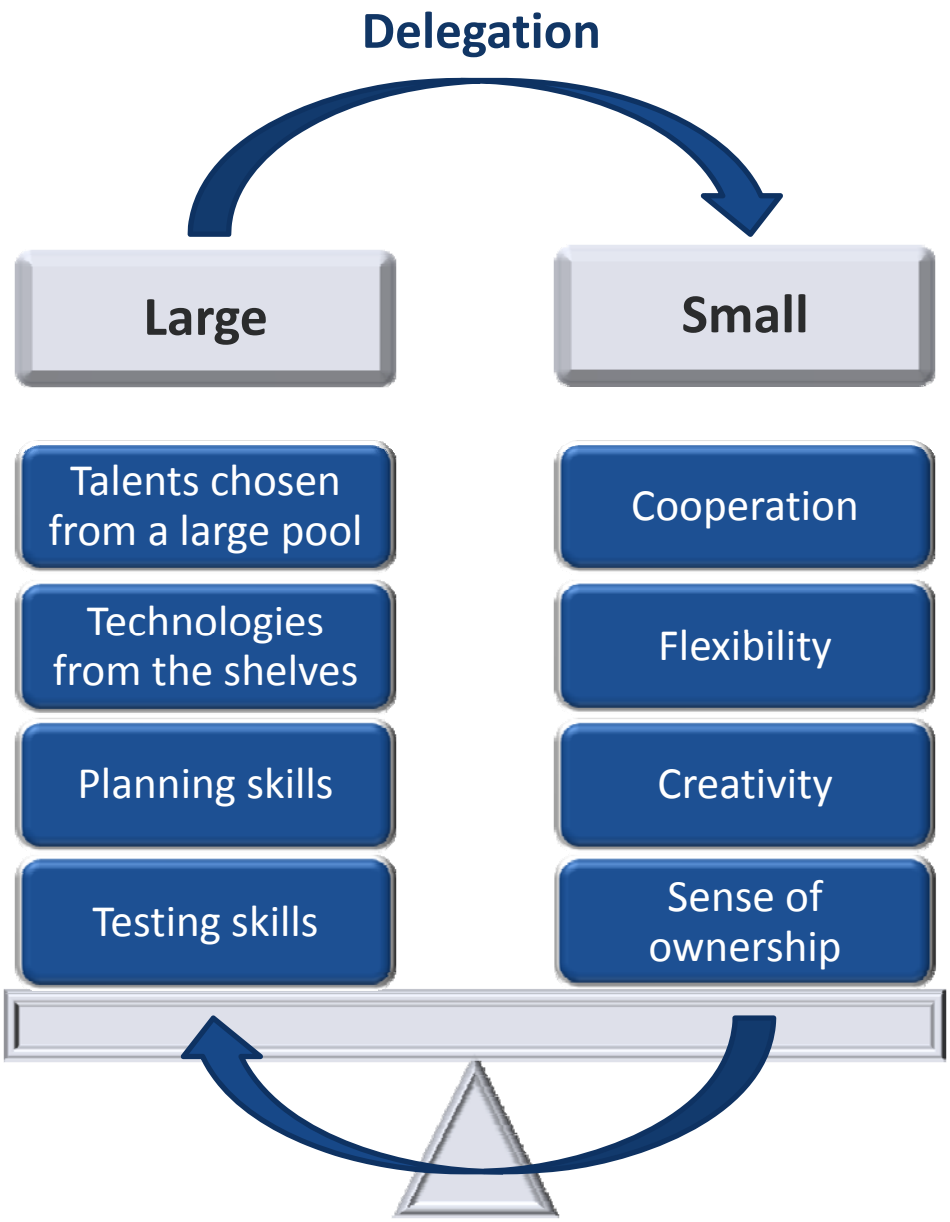
Choices for speed



Organization in the organization

Organizational speed: Balancing forces




Delegation
Large
Small
Talents chosen from a large pool
Technologies from the shelves
Planning skills
Testing skills
Cooperation
Flexibility
Creativity
Sense of ownership
Resources

Pirelli's approach and time-compression diseconomies

- ✓ In a concurrent approach, more actions are taken without knowledge of prior steps, and this leads to a higher probability of mistakes
- ✓ Concurrent activities might multiply unnecessary trials
- ✓ Limited information-processing capability

Testing and planning capabilities

People chosen also for their soft skills

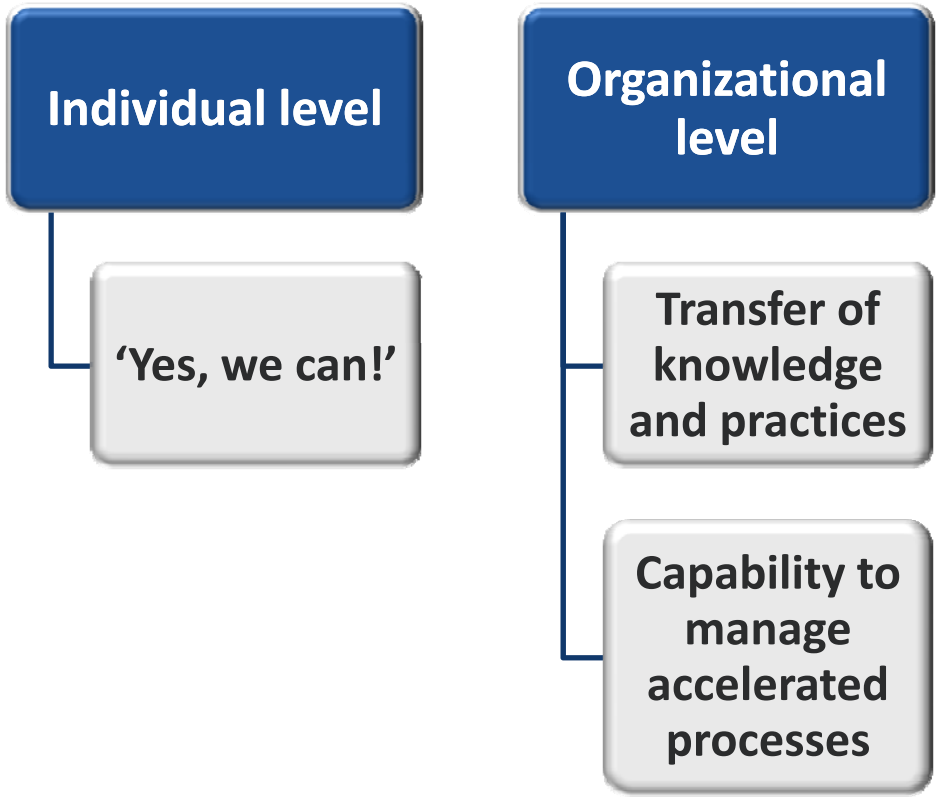
Transparency, cooperation, and free flow of information

Pirelli and the F1 experience

Was it just a one-off experience?

What did they gain?

A one-off experience? Positive spillovers!



Speed capability

-Allows to enter later in uncertain environments

-Affects positively firms' market value

-Innovative efficacy and speed capabilities are complementary

Source: Pacheco de Almeida et al., 2013

A one-off experience? Positive spillovers!

- **Individual level**
  - ‘Yes, we can!’
- **Organizational level**
  - Transfer of knowledge and practices
  - Capability to manage accelerated processes

R&D in accelerated processes: Concluding remarks

A case of success: Speed, Quality, and Efficiency

Open Innovation?

Mostly an organizational factor

Human capital

Why there and not somewhere else?