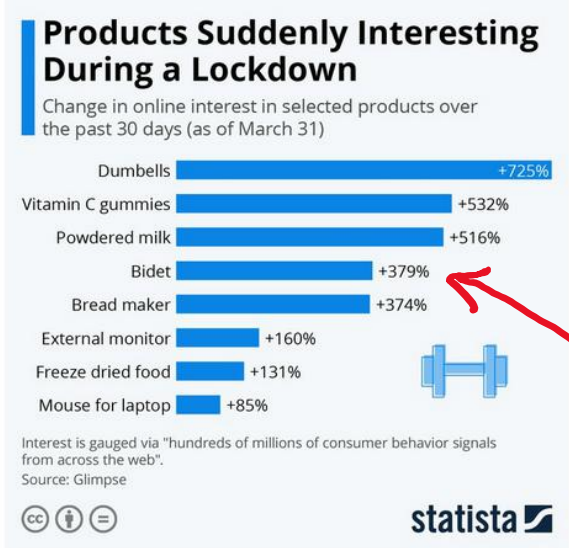


Why companies underprepare for crises – time to stress test supply chains?

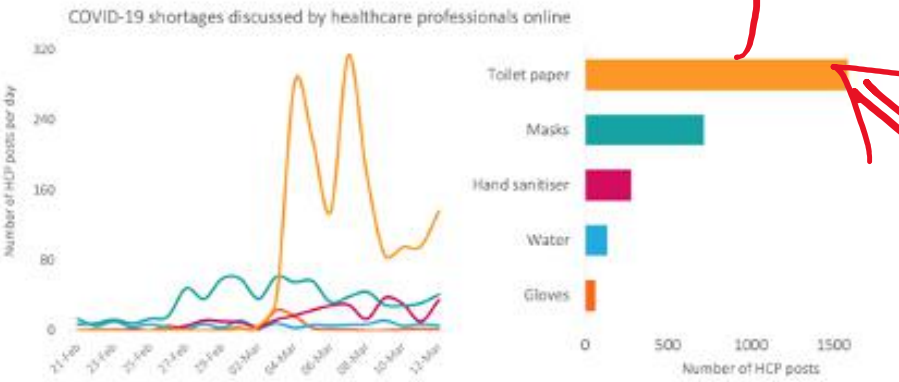
Prof. Dr. Mirko Kremer



Covid-19: What's Supply Chain Got To Do With It?



Unexpected Supply-Demand Mismatches...



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Coronavirus: 'I returned my suits and spent £100 on joggers'

By Dearball Jordan & Mary-Ann Russon
Business reporter

28 April 2020

DirectEmployers @DirectEmployers

When #WearYourPajamasToWorkDay falls on the same day as your all-staff meeting, you run with it! Who else is wearing their pajamas "to the office" today? #pajamaday #HR #WeAreDE

Models present creations for fashion house Dolce Gabbana during the Men Fall - Winter collection shows at the Milan's Fashion Week
Source: GABRIEL BOUYS/AFP via Getty Images

Supply Chains – Some predictions

Exiting a COVID-19 Lockdown: The Bumpy Road Ahead for Many Supply Chains

16 Pages • Posted: 3 May 2020

[Jan C. Fransoo](#)

Kuehne Logistics University

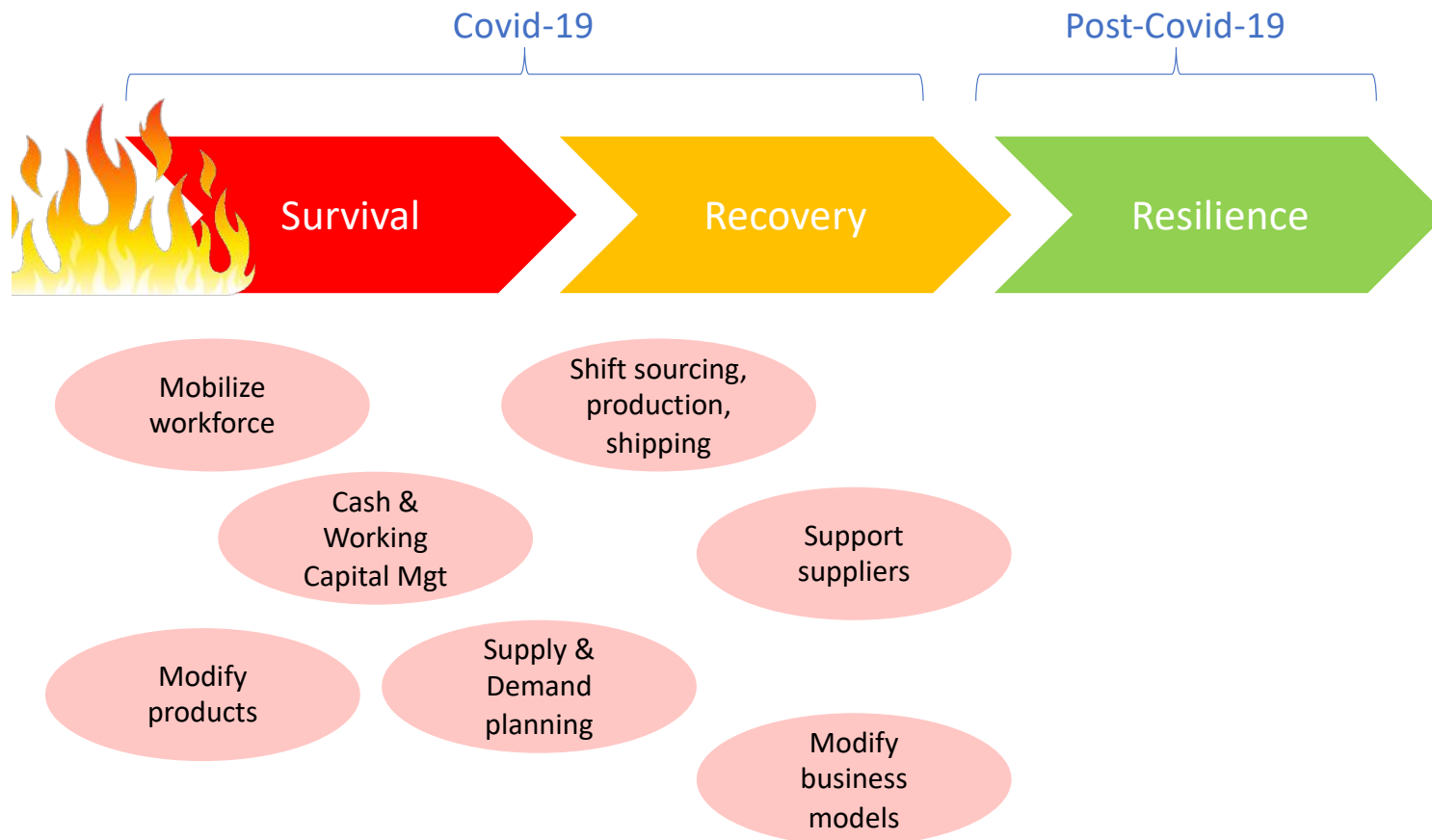
[Maximiliano Udenio](#)

KU Leuven - Faculty of Business and Economics (FEB)

Date Written: May 1, 2020

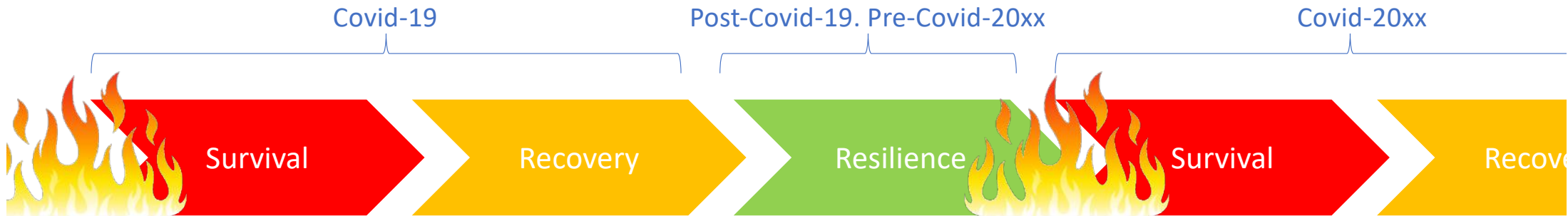


Activities along the Crisis Timeline: Recovery & Preparedness



Supply-chain recovery in coronavirus times – plan for **now** and the **future**. By Alicke, Azcue, Barriball, *McKinsey*, March 2020

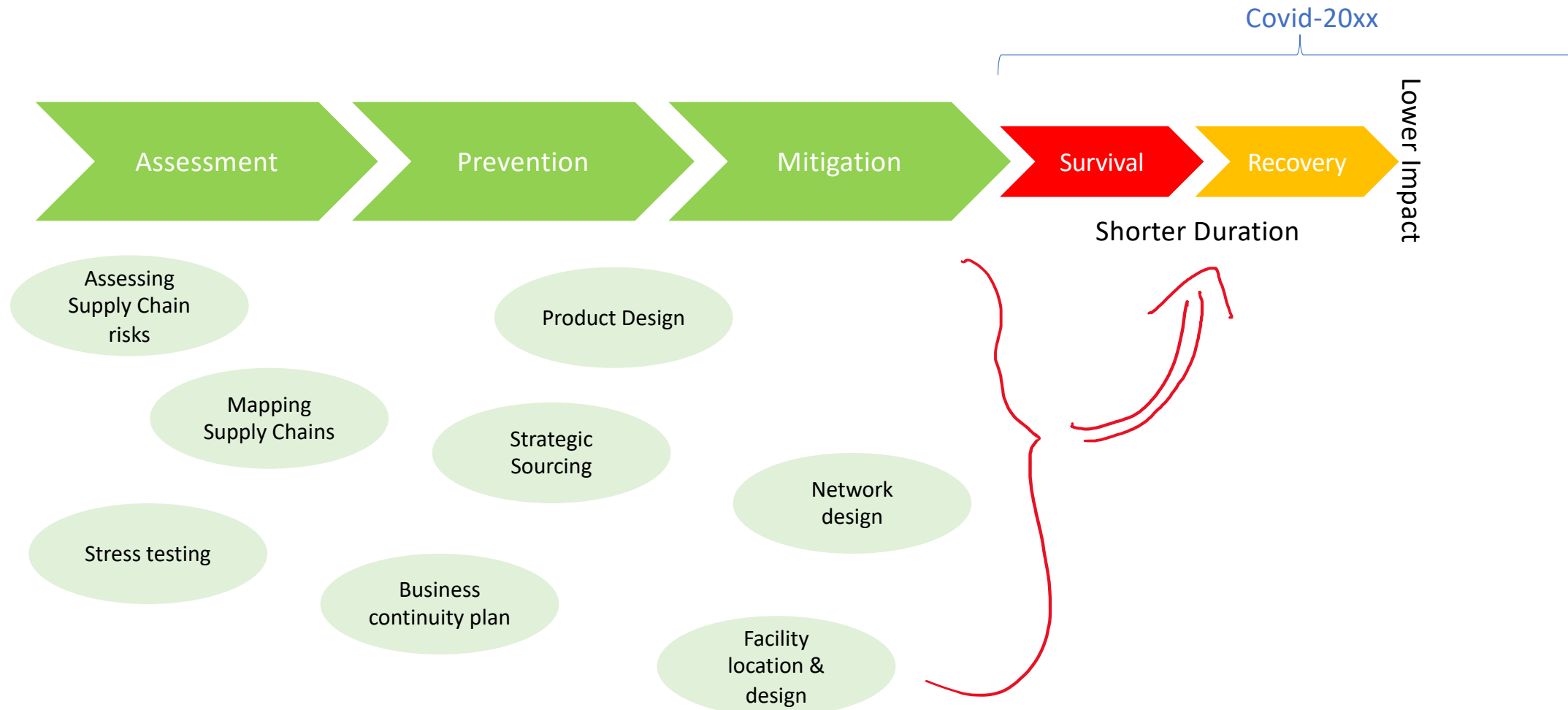
Activities along the Crisis Timeline: Recovery & Preparedness



Nach dem Spiel ist immer vor dem Spiel.

(Sepp Herberger)

Activities along the Crisis Timeline: Recovery & Preparedness



Is It Time to Rethink Globalized Supply Chains?

The COVID-19 pandemic should be a wake-up call for managers and prompt them to consider actions that will improve their resilience to future shocks.

Willy Shih • March 19, 2020



Sure. But this (underprepared supply chains) is likely to happen again. And again. And again.

11 March 2020

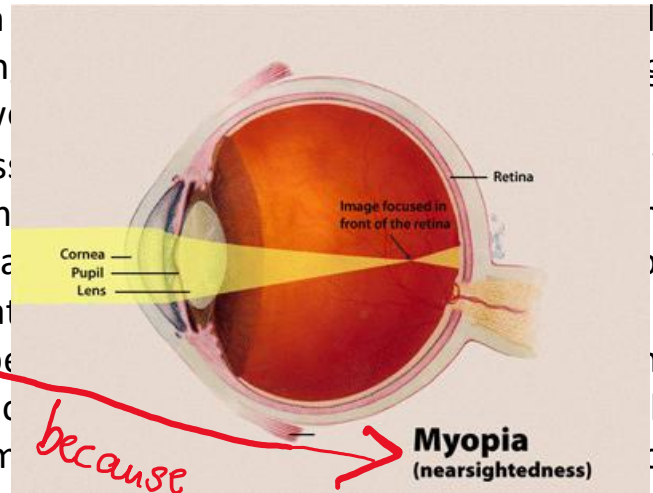


IS CORONA A WAKEUP CALL FOR THE SUPPLY CHAIN?

By > Prof. Dr. Jan Fransoo

“...However, the real question is whether we should have been better prepared, and whether **our current response is a demonstration of incompetence rather than competence**. As an academic observer, I am constantly surprised by the lack of awareness in the supply chain. In each and every logistics

...held in... sourcing... strategy if we... classes stress... However, on... forget the ba... demand that... programs, be... how to resp... profession m... satisfaction...”




because →




Assessment

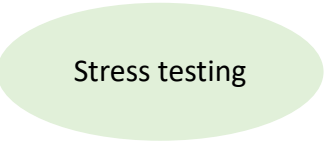
Myopia: Supply Chain Blind Spots



Assessing
Supply Chain
risks

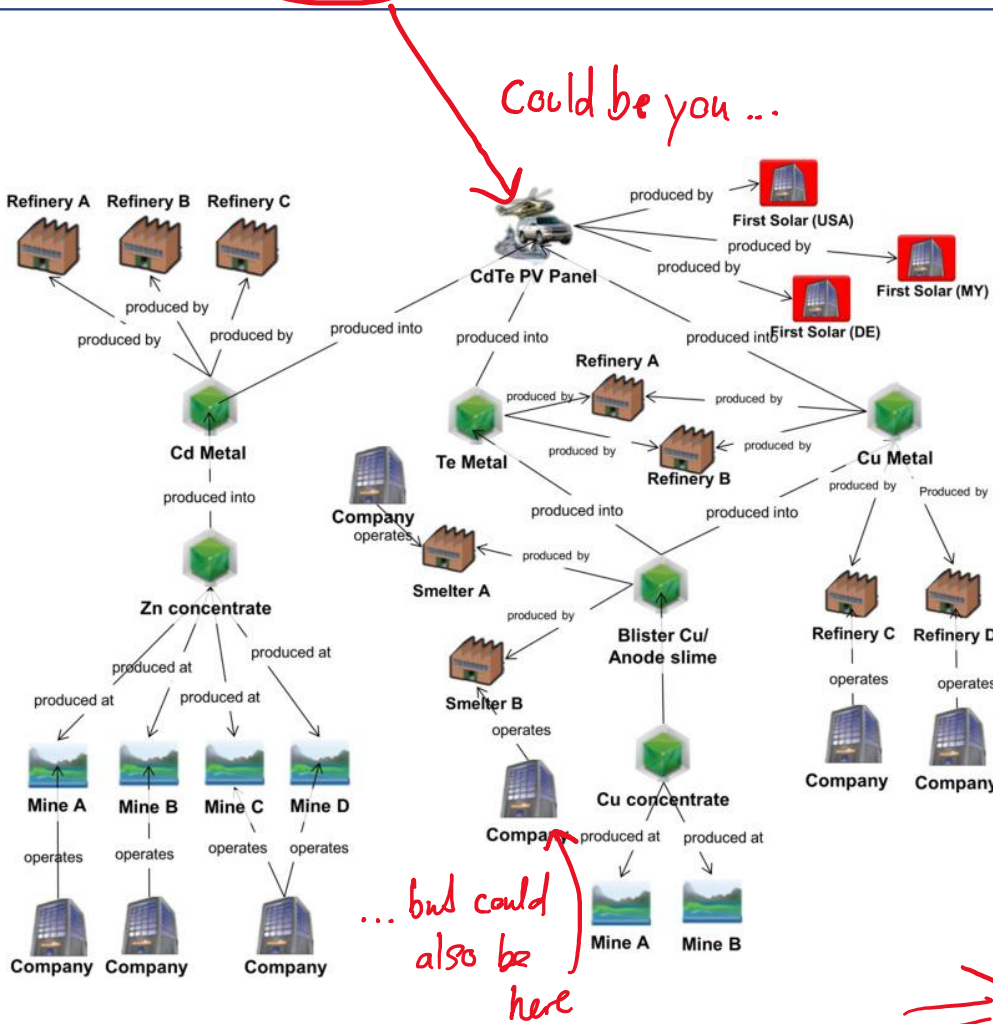


Mapping
Supply Chains



Stress testing

Find the weak link in your supply chain



You can't make a car with 99% of the parts. Coronavirus could wreck the global auto industry

By Chris Isidore, CNN Business
Updated 2155 GMT (0555 HKT) February 10, 2020



TOP STORIES

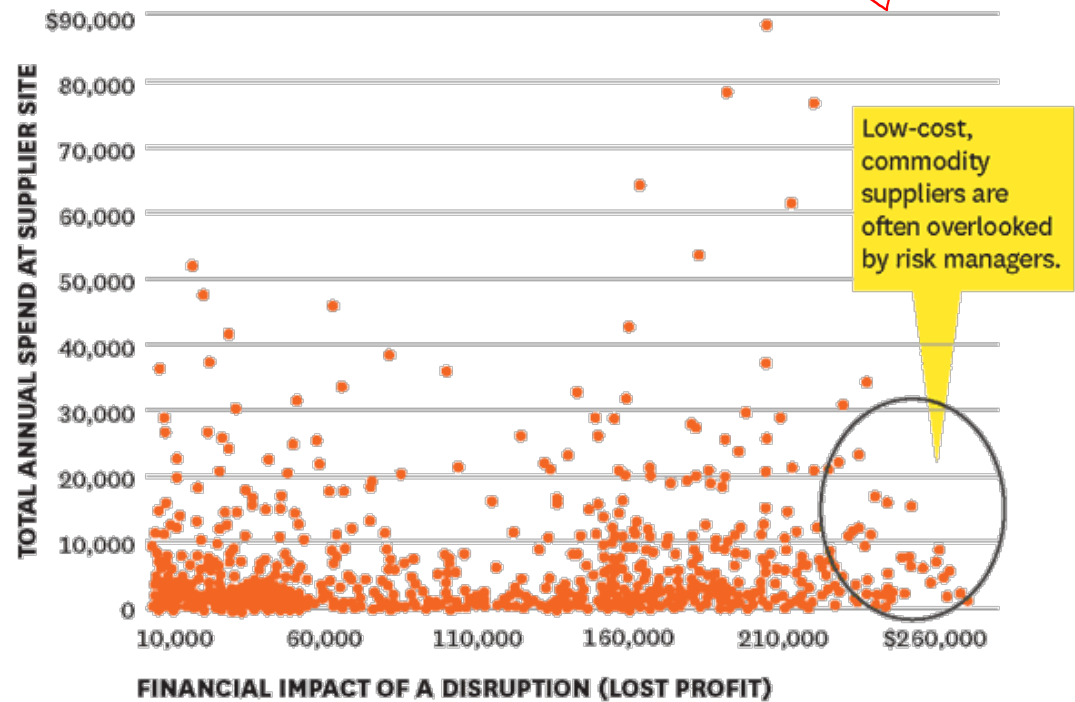
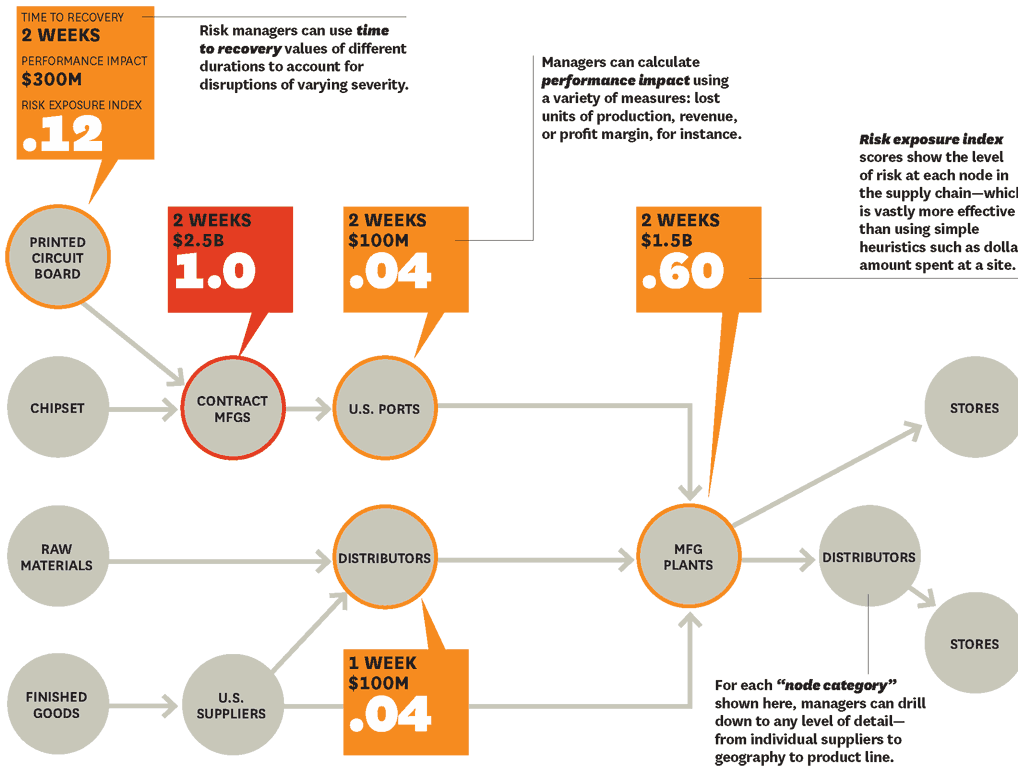
- A 'panic button' moment for Republicans
- Republican operatives launch group supporting Biden

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⇒ Supply Chain Mapping is crucial

Find the weak link in your supply chain

Need smart metrics & SC visibility... to gain crucial insights. Such as





**Myopia:
(Lack of) learning
in “wicked” environments**

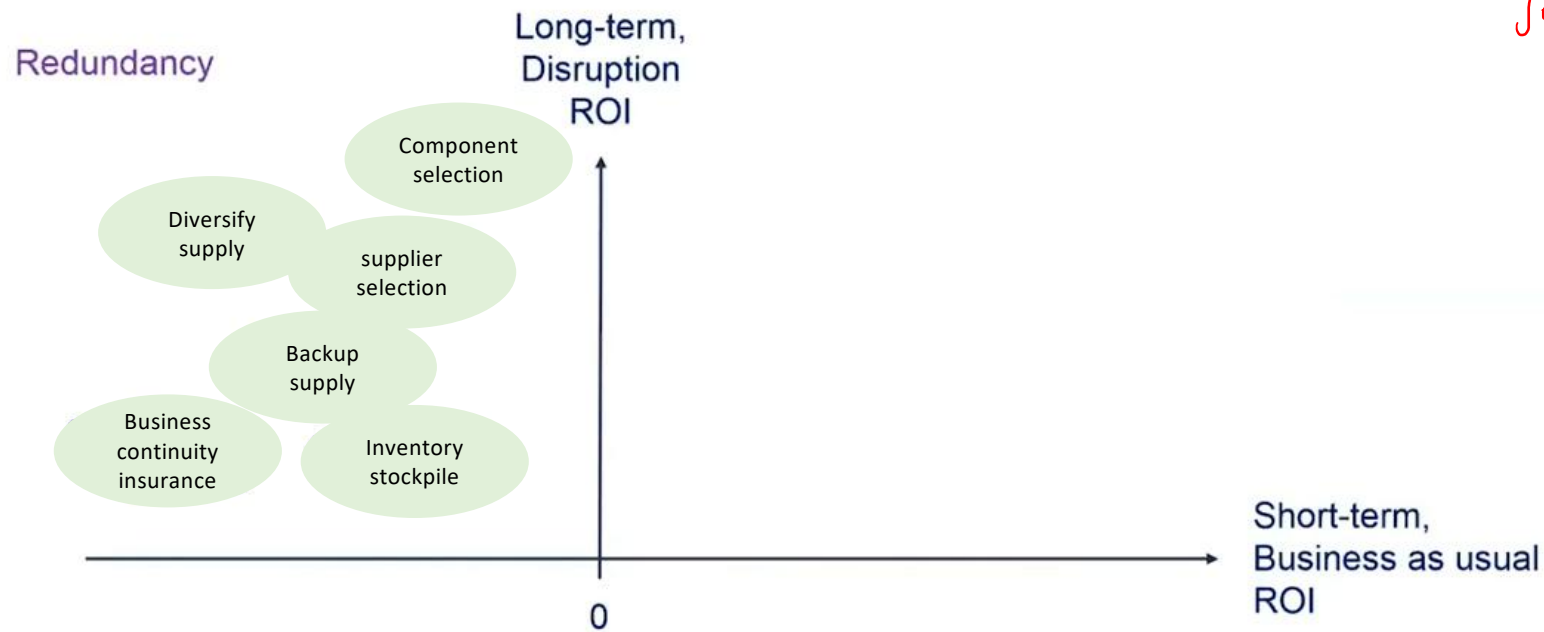
Strategic sourcing under severe disruption risk: Learning failures and under-diversification bias

London Business School

SCRM Return On Investment (ROI)



Jeremy



Note: For concept illustration only. Axis coordinates depend on firm, industry and nature of disruption.

Strategic sourcing under severe disruption risk: Learning failures and under-diversification bias

2011

Happy Valley, PA



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Strategic Sourcing Under Severe Disruption Risk: Learning Failures and Under-Diversification Bias

41 Pages · Posted: 18 Aug 2014 · Last revised: 24 Mar 2020

[Kyle Goldschmidt](#)
University of St. Thomas

[Mirko Kremer](#)
Frankfurt School of Finance & Management

[Douglas J. Thomas](#)
University of Virginia – Darden School of Business

[Christopher Craighead](#)
University of Tennessee – College of Business Administration

Date Written: March 20, 2020

Abstract

We study sourcing behavior in “severe” conditions where supply disruptions are rare, but carry the potential of wiping out several periods’ worth of a firm’s profit. The trade-off between scale economies from supplier consolidation and risk mitigation from supplier diversification is at the core of firms’ sourcing strategy, and one that is empirically understudied. We study supplier diversification through a behavioral lens, and test theoretically derived predictions under controlled laboratory conditions. Our data provides strong evidence for “under-diversification.” We posit that this pattern is partly due to the fact that investing in supplier diversification involves an upfront cost to achieve a delayed, and rarely encountered, benefit. Under-diversification bias is costly and its causes difficult to overcome, presenting firms with the daunting task of devising debiasing mechanisms that reinforce a supplier diversification strategy when the rarity of disruptions almost always render supplier consolidation the ex-post preferred strategy.

Keywords: Behavioral Operations, Experiments, Supply Chain Management, Risk Management

2020

Vicious management cycle: The case of Toyota



Case Study The Toyota Group and the Aisin Fire

Toshihiro Nishiguchi • Alexandre Boudet



Together, suppliers organized to save Toyota from a devastating crisis that threatened to halt operations for weeks.

Toshihiro Nishiguchi is professor of management at Hitotsubashi University, Institute of Innovation Research.

Alexandre Boudet is research advisor, International Consulting Department, Mitsubishi Research Institute.

The Japanese model of long-term collaborative partnerships between firms and their suppliers has attracted much attention from business researchers and practitioners. Several U.S. and European automakers have attempted to establish similar partnerships of their own, seeking to reduce their supplier base and cultivate relationships with their best suppliers. As a result, the early involvement of suppliers in product development and cost-reduction efforts is becoming standard practice in the automotive industry and beyond.

A recent crisis involving Toyota and its supplier network suggests, however, that

the Japanese model — or at least the Toyota model — involves more than a set of long-term relationships between a firm and a few select suppliers. As the Toyota group's collaborative response to the sudden destruction of a key supplier's plant suggests, the relationships among a firm's suppliers are equally important. More generally, a complex mix of institutions permits self-organization during times of crisis with little need for a leader's direct control. These strong relationships among many firms along with the steady but largely invisible control of a leader promote flexible and coordinated responses to crises. In addition, they foster long-term competitiveness through decentral-

Nishiguchi • Boudet

The machine that ran too hot

The woes of the world's biggest carmaker are a warning for rivals

Toyota consolidated their supply base again in the 2000s, gaining “unprecedented economies of scale by using single suppliers for entire ranges of its cars across multiple markets”



INDUSTRY

Toyota Says Toll From Earthquake Cost ¥70 Billion in Fiscal 2012

Loose Chain

When a company in Toyota's supply chain faces an accident or natural disaster, it affects nationwide production.



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April 25, 2016 01:00 AM

How Toyota applied the lessons of 2011 quake

When disaster struck again, preparations paid off

HANS GREIMEL

TWEET SHARE IN SHARE EMAIL PRINT

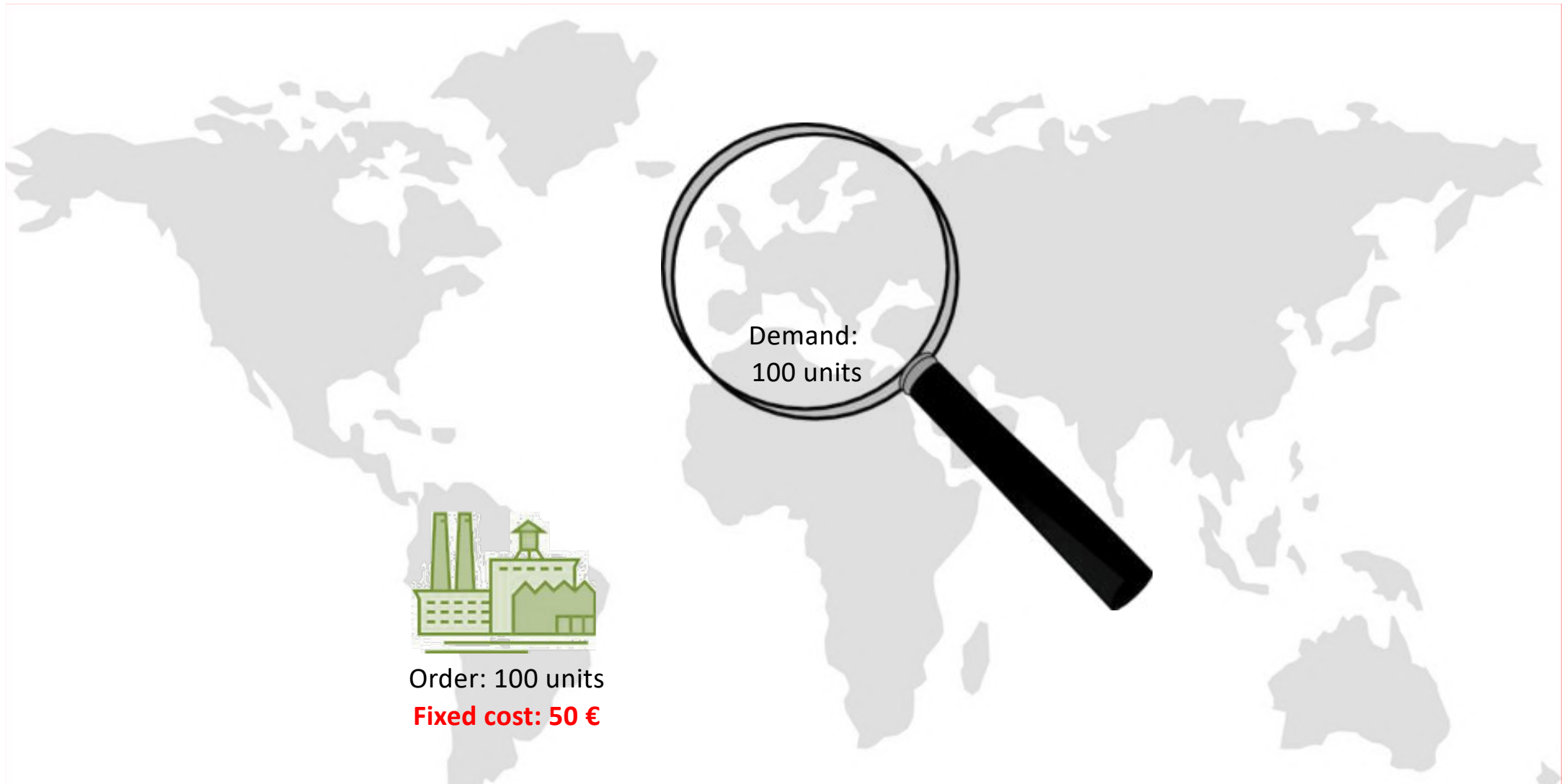


Like all of Japan's automakers, Toyota has spent the five years since the March 2011 disaster strengthening itself for the next crisis. And when it hit this month, Toyota's preparation largely paid off.

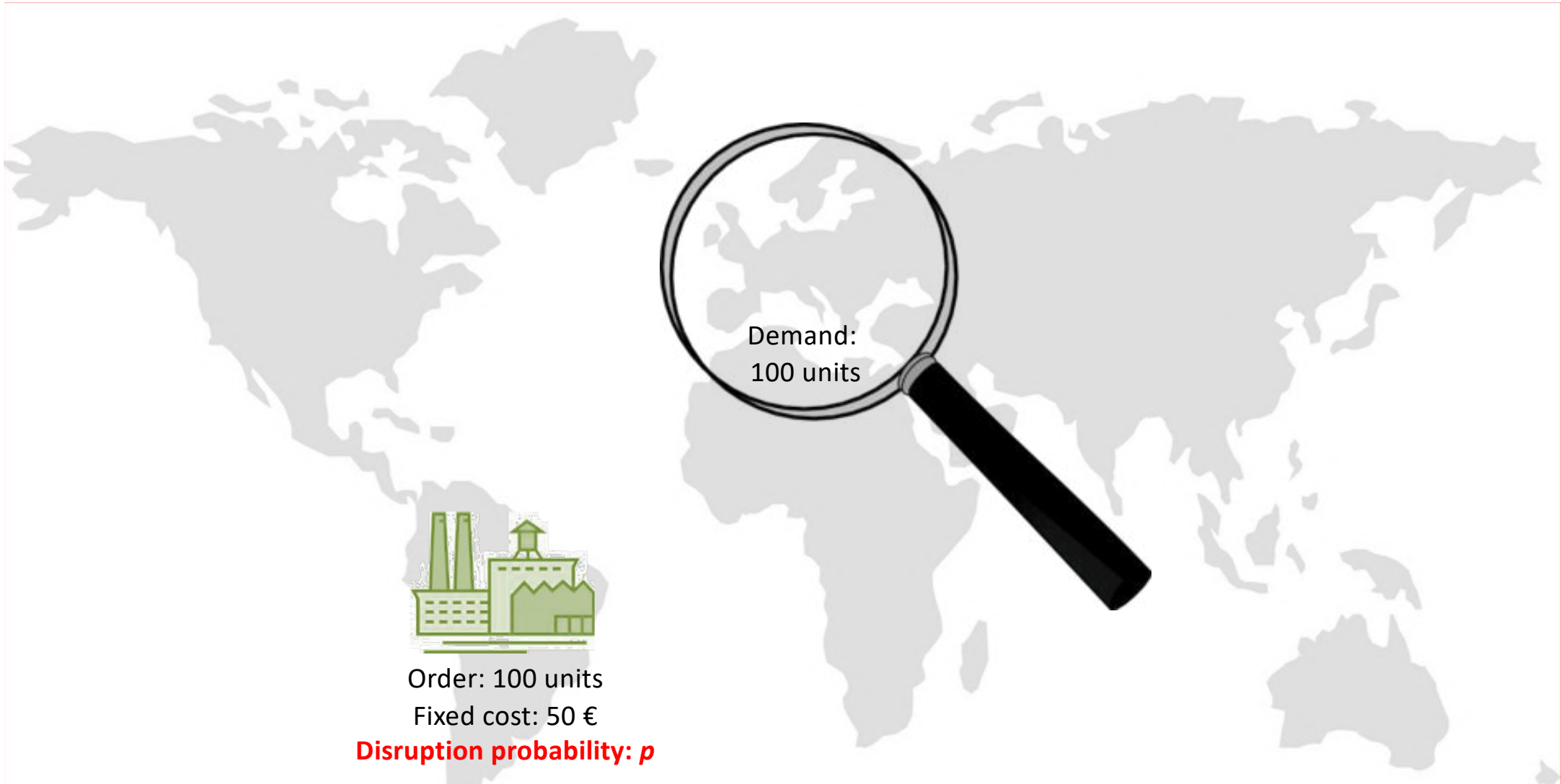
Supply Base Diversification under Disruption Risk: Fundamental tradeoff



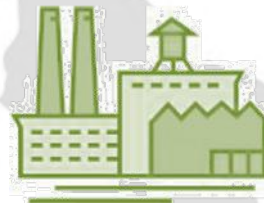
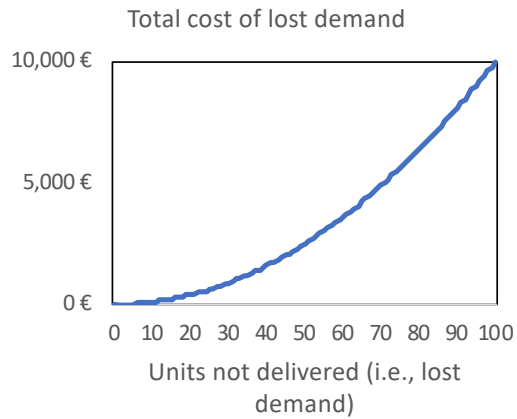
Supply Base Diversification under Disruption Risk: Fundamental tradeoff



Supply Base Diversification under Disruption Risk: Fundamental tradeoff



Supply Base Diversification under Disruption Risk: Fundamental tradeoff

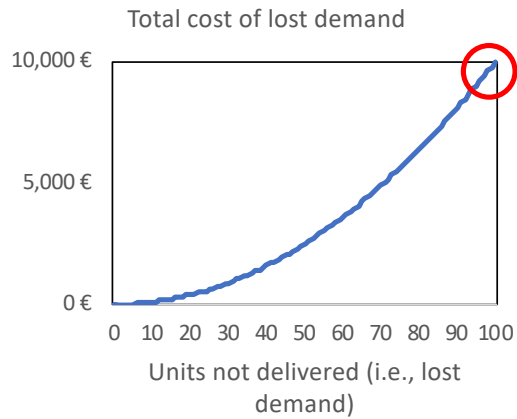


Order: 100 units

Fixed cost: 50 €

Disruption probability: p

Supply Base Diversification under Disruption Risk: Fundamental tradeoff



**Cost of lost demand:
10,000 €**

Demand:
100 units

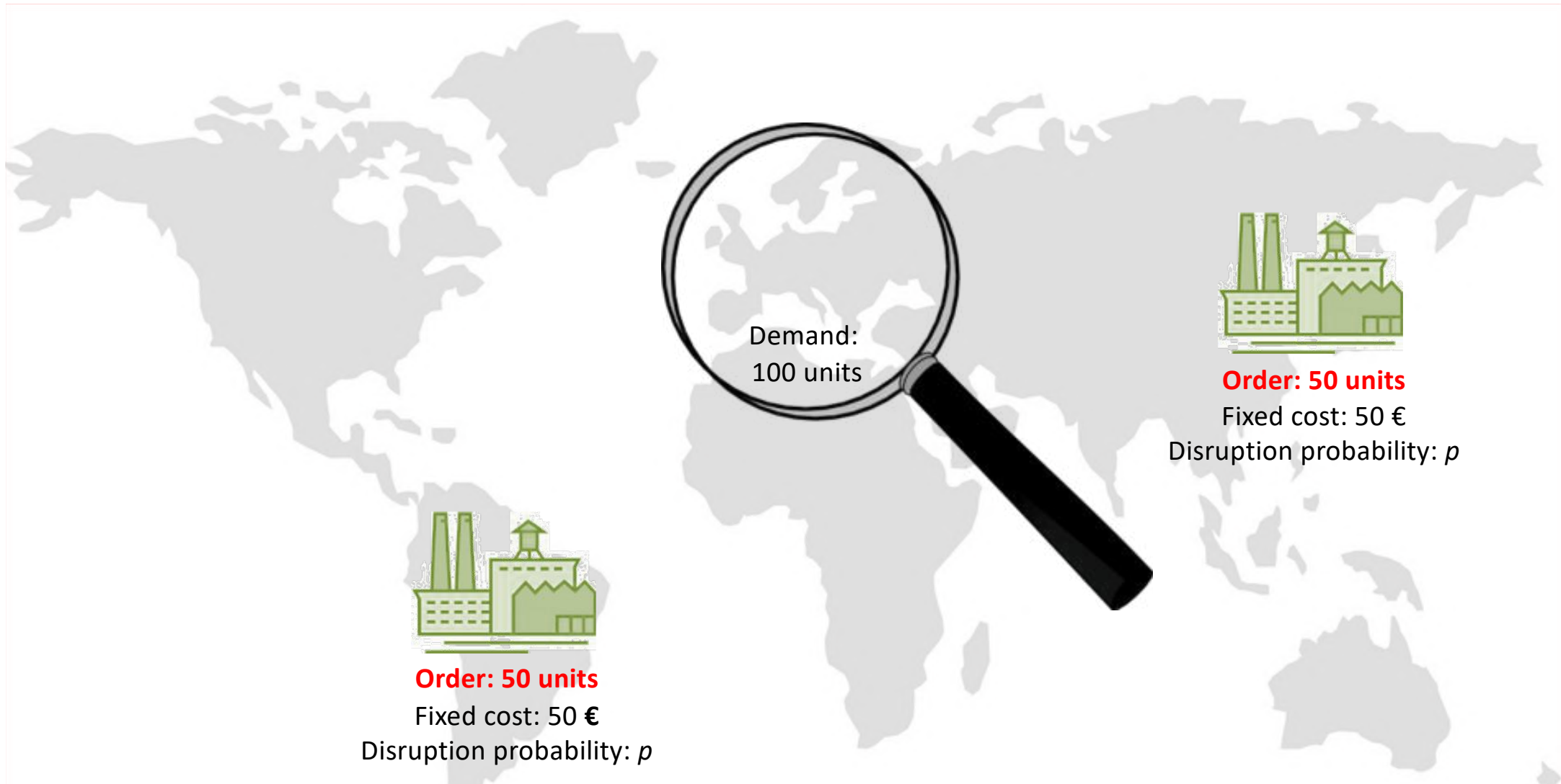


Order: 100 units
Fixed cost: 50 €
Disruption probability: p

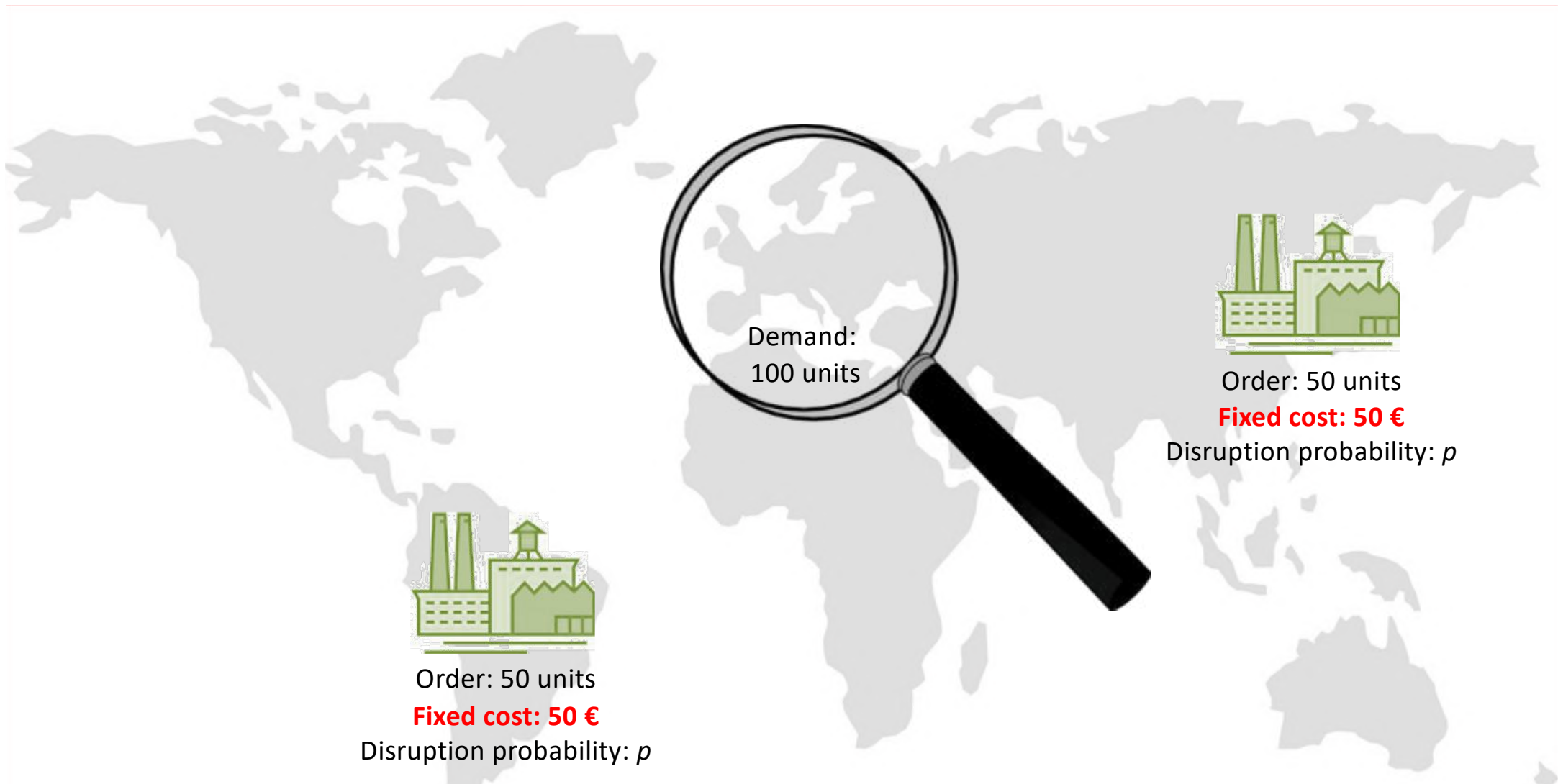
Supply Base Diversification under Disruption Risk: Fundamental tradeoff



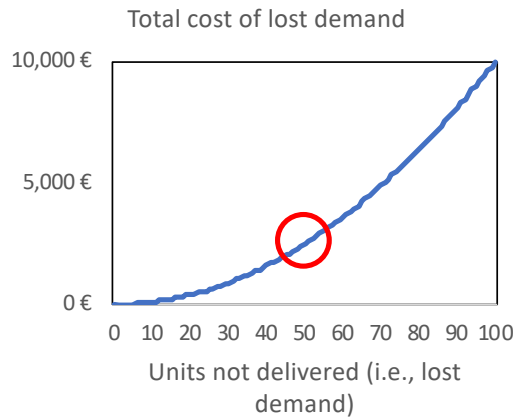
Supply Base Diversification under Disruption Risk: Fundamental tradeoff



Supply Base Diversification under Disruption Risk: Fundamental tradeoff



Supply Base Diversification under Disruption Risk: Fundamental tradeoff



**Cost of lost demand:
2,500 €**

Demand:
100 units



Order: 50 units
Fixed cost: 50 €
Disruption probability: p



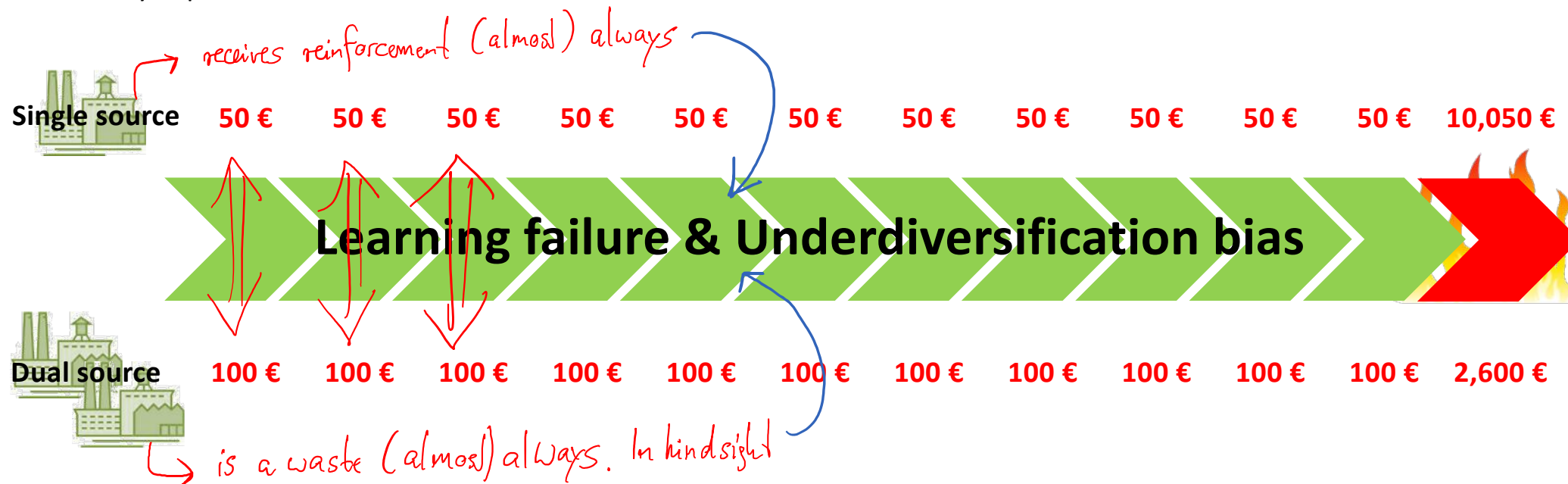
Order: 50 units
Fixed cost: 50 €
Disruption probability: p

High impact low probability disruption risk environments: Main Hypothesis

Decisions “by description”

$$C(n) = \delta n + \left(\frac{\alpha D^2}{n} \right) [p + (n - 1)p^2]$$

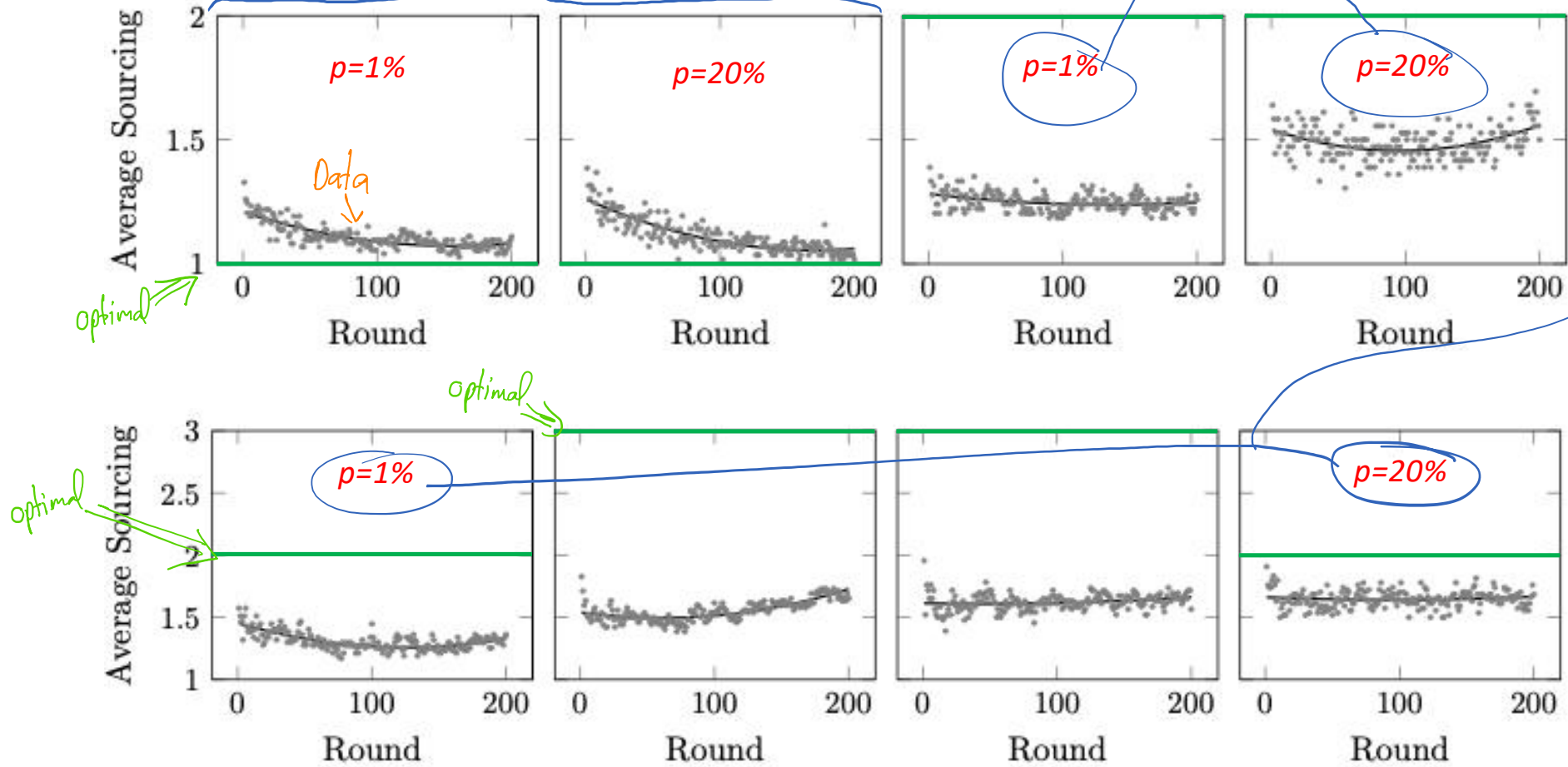
Decisions “by experience”



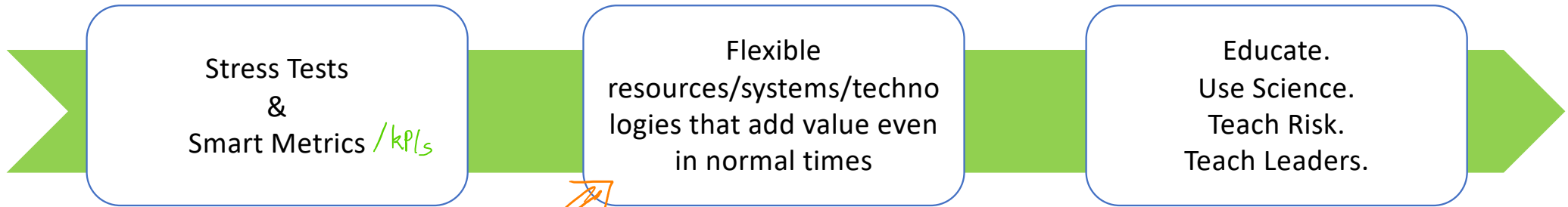
Results from a controlled experiment

Underdiversification bias & Efficient learning coincide

low probability drives underdiversification bias

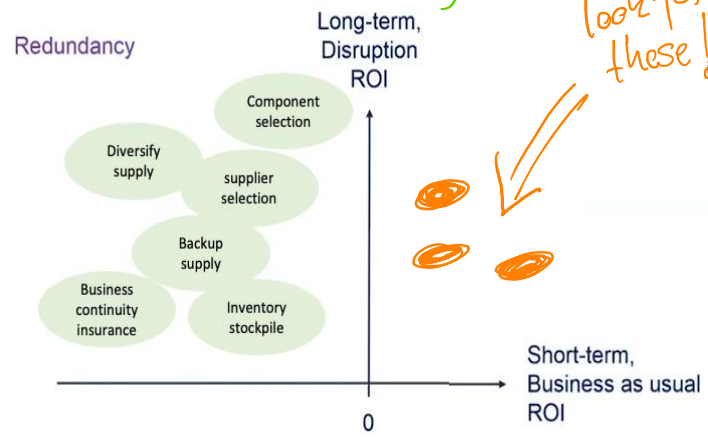


How to build sustainable resilience into supply chains?



CRISIS MANAGEMENT
We Need a Stress Test for Critical Supply Chains
by David Simchi-Levi and Edith Simchi-Levi
April 28, 2020

& probably some regulation towards it. (because of organizational incentives & human decision bias)



11 March 2020

IS CORONA A WAKEUP CALL FOR THE SUPPLY CHAIN?

By Prof. Dr. Jan Fransoo


We'll keep trying!!

"...However, the real question is whether we should have been better prepared, and whether our current response is a demonstration of incompetence rather than competence. As an academic observer, I am constantly surprised by the lack of risk awareness in the supply chain. **In each and every logistics class held in the past 50 years, we have taught students that a dual-sourcing strategy is usually preferable to a single-sourcing strategy if we take all costs into account. And our finance classes stress the need to account for operational risk. However, once they're in the field, many professionals tend to forget the basics they learned.** Moreover, many professionals demand that basic theoretical insights be removed from their programs, because they would rather learn "tips and tricks" on how to respond in times of crisis. Maybe showing that our profession matters at such moments can be a source of satisfaction..."



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Professor of Supply Chain Management

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