

Introduction How to Engineer Systems as Start-up or in Disruptive Circumstances?

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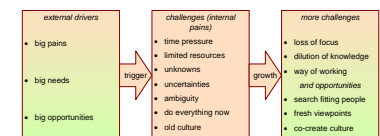
Abstract

Start-ups and organizations responding to disruptive changes share the challenge of responding fast, often with limited suitable resources, while the environment may impose rigid ways of working. This paper explores these challenges and options to cope with them.

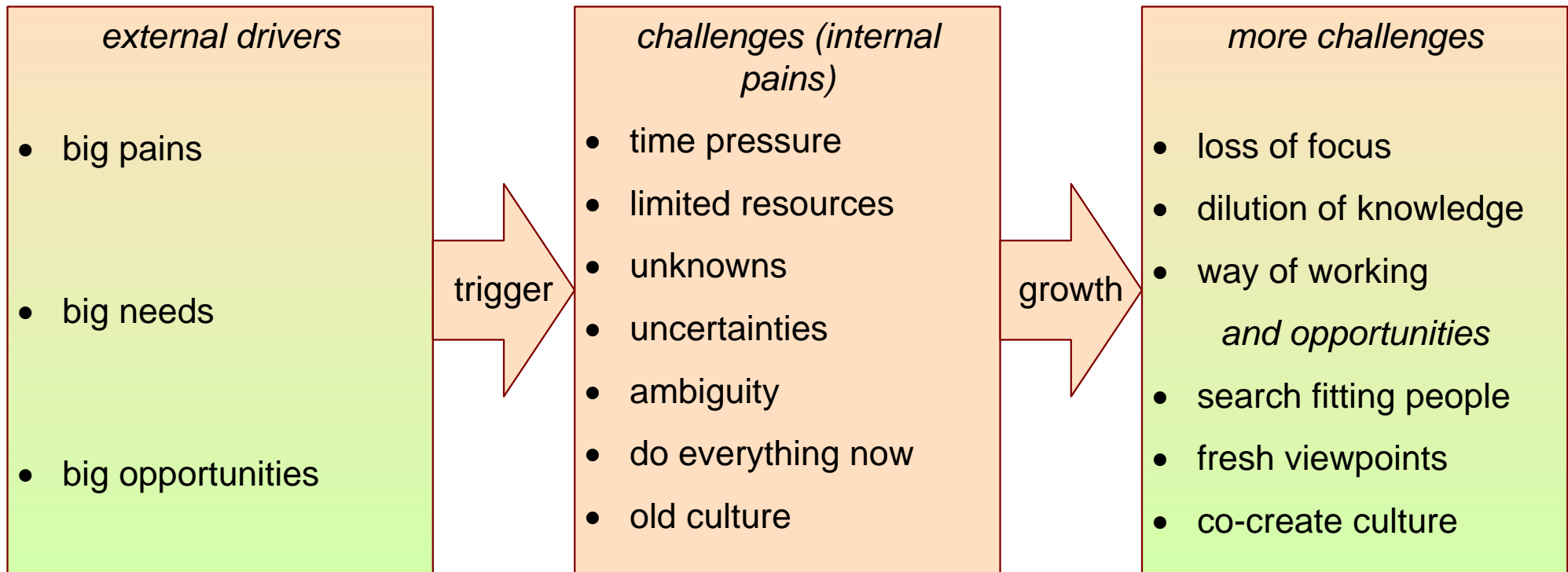
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Disruptive Change Consequences



Questions that the problems, challenges, and opportunities raise

- How to keep **focus**?
- How to cope with **chaos** and to maintain **overview**?
- How to **discover unknowns**?
- How to **reduce uncertainties** and ambiguity?
using **time** and **resources wisely**
- How to **lead others** in the organization?
- How to **engage external stakeholders**?
- How to **orchestrate** the **ecosystem**?

Disruptive Event Examples

Defense (neglect and dependence)

geopolitical changes

- Russia
- China
- USA

new threats

- electronic warfare
- drones
- hybrid warfare

demographics

- few young people

Health care (infarct)

demographics

- few young people
- many old people
- many very old

society

- bureaucracy
- budget pressure
- privacy

health, increased

- obesity
- multi problems
- age related

Climate and environment (emergency) GHG, water, air, and soil quality, biodiversity, heat waves, droughts, tornados, floodings, sea level rise, etc.

and many more...

First Answer: Use Light-Weight Architecting

- How to keep **focus**?
 - How to cope with **chaos** and to maintain **overview**?
 - How to **discover unknowns**?
 - How to **reduce uncertainties** and ambiguity?
-
- **Time-box** and **iterate** relentlessly
 - over a **wide variety** of **viewpoints**
 - while **zooming-in** and **zooming-out**
 - and **capturing insights simple** and **pragmatic**

Answer Part 2: Leadership

- How to **lead others** in the organization?
 - How to **engage external stakeholders**?
 - How to **orchestrate** the **ecosystem**?
-
- Using **leadership** skills bridging **ratio** and **feelings**
 - to **manage self** (which requires knowing yourself well)
 - and to **connect to others** emotionally as well as rationally
 - such that interaction happens in **learning mode**