Towards Multi-Scale Theories of Technology Entrepreneurship

PDW - Panel on Time, Resources & Entrepreneurship AoM Annual Meeting, 2019

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My Focus: Digital Technology Based Entrepreneurship (DE)

What is Digital Entrepreneurship?

Key Characteristics:

- Value Proposition Involves:
 Data / IoT / Algorithms/ Al
- Delivery through Cloud Based Technology Infrastructure
- Distributed Ownership of Resources
- Incremental Experimentation and Validation at Speed: e.g. one or more small innovation delivered to end customers, at scale, every day:
 - Timing Matters, Resources are Adapted Regularly!

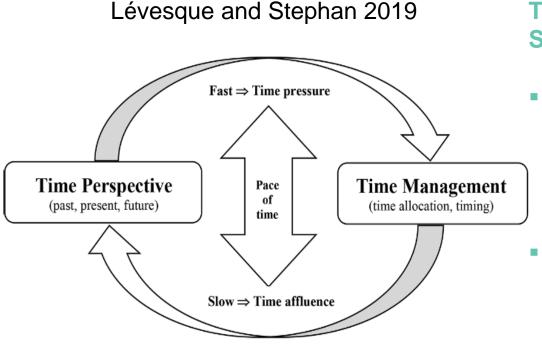
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An Influential & Growing "Slice" of

Technology Entrepreneurship Research Field



Time: Perspective & Management

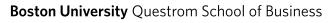


"Strategy (perspective) got you initial funding, ops (delivery) got you the next round.

Now these decisions go hand in hand !"

Three Relevant Decision Time Scales for Digital Entrepreneurship

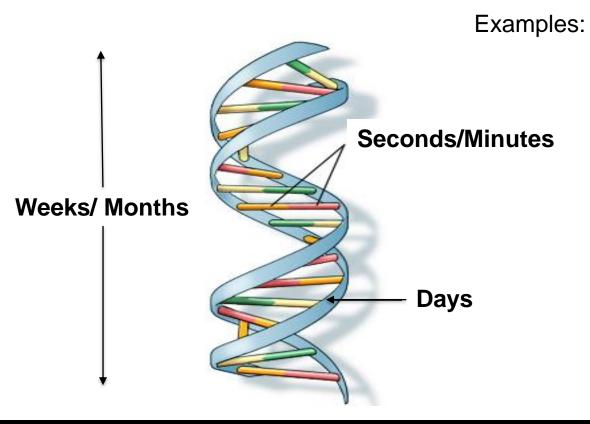
- Strategic Decisions (Scale: <u>Weeks/Months</u>) around
 resources (e.g., valuation, cash flow) & competitive evolution
- Micro (Ops+ Strategy, Scale: <u>Days</u>) based on adapting resources such as operating routines & allied entrepreneurial behavior
- Nano Ops (Scale: Seconds/ Minutes) for resource allocation around demand – supply balance
 based on algorithms such a Uber's capacity and pricing decisions.



Emergent Theory Questions

(at the intersection of data science/ AI, entrepreneurship & OM)

Multi Time-Scale *or Nested Models* that <u>Must Link</u> Data, Entrepreneurial Strategy, Resource Allocation & Operations (Delivery) Decisions



s: Under which conditions can efficient nesting of algorithms and operating routines enhance startup valuation? And why?

> How should a startup organize for governing (e.g. during resource adaptation) multi time-scale decisions?

How does nesting of time scales affect end customers' decision making?

* Joint - entrepreneurship + ops - theories could borrow from engineering and complexity science models (See papers in Artificial Intelligence-EDAM 2014, ICED 2019 and DSM 2019)