KEY CHALLENGES IN EARLY-STAGE SOFTWARE STARTUPS

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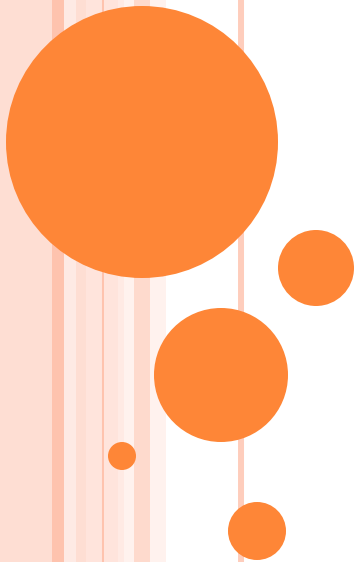
INTRODUCTION – 1/3

Startup companies are unique [1]:

Little or no operating history

Limited resources

Multiple influences

Dynamic technologies and markets
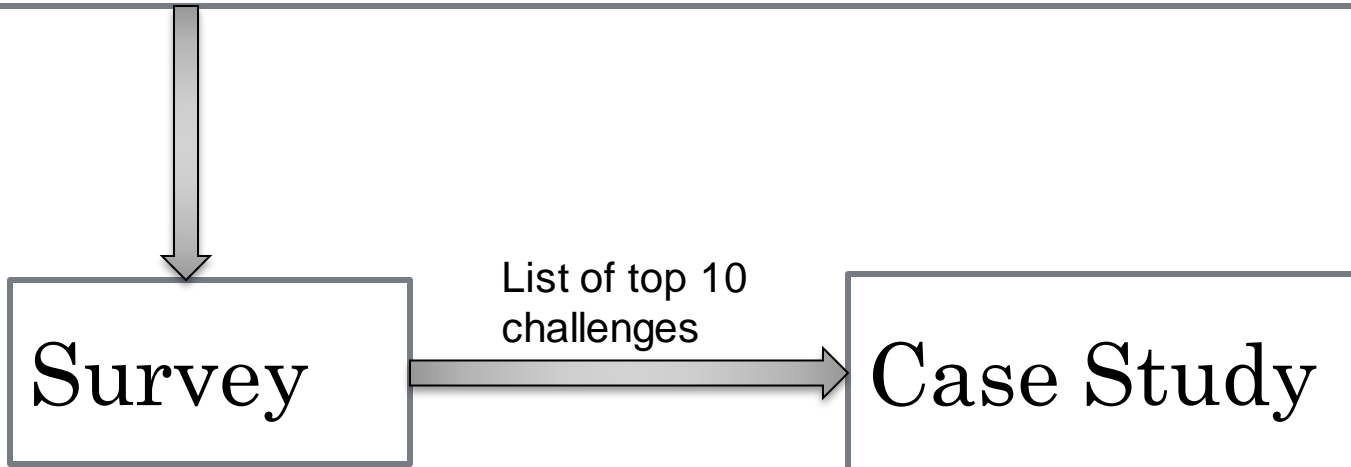
INTRODUCTION – 2/3

- **60%** of startups do not survive in the first five years [2]
- **75%** of venture capital funded startups fail [2]
- Little rigor and relevance exist in the studies about software startups [3]
- Do not focus on investigating issues and challenges [3]

INTRODUCTION – 3/3

- Early-stage software Startups

    - Young and immature
    - Small in size

RESEARCH QUESTION AND APPROACH

What are the key challenges that early-stage software startups face?

Survey

List of top 10 challenges

Case Study

What are the key challenges that early-stage software startups face?

↓

Survey → List of top 10 challenges → Case Study

SURVEY – 1/6

- Purpose: To obtain a general overview of challenges that early-stage software startups face

- A web-based survey advertised by means of blogs etc.

- Multiple Choice Questions (MCQs) having following parts:
    - Introduction
    - Background information
    - Learning and product development status
    - Challenges

Survey Description

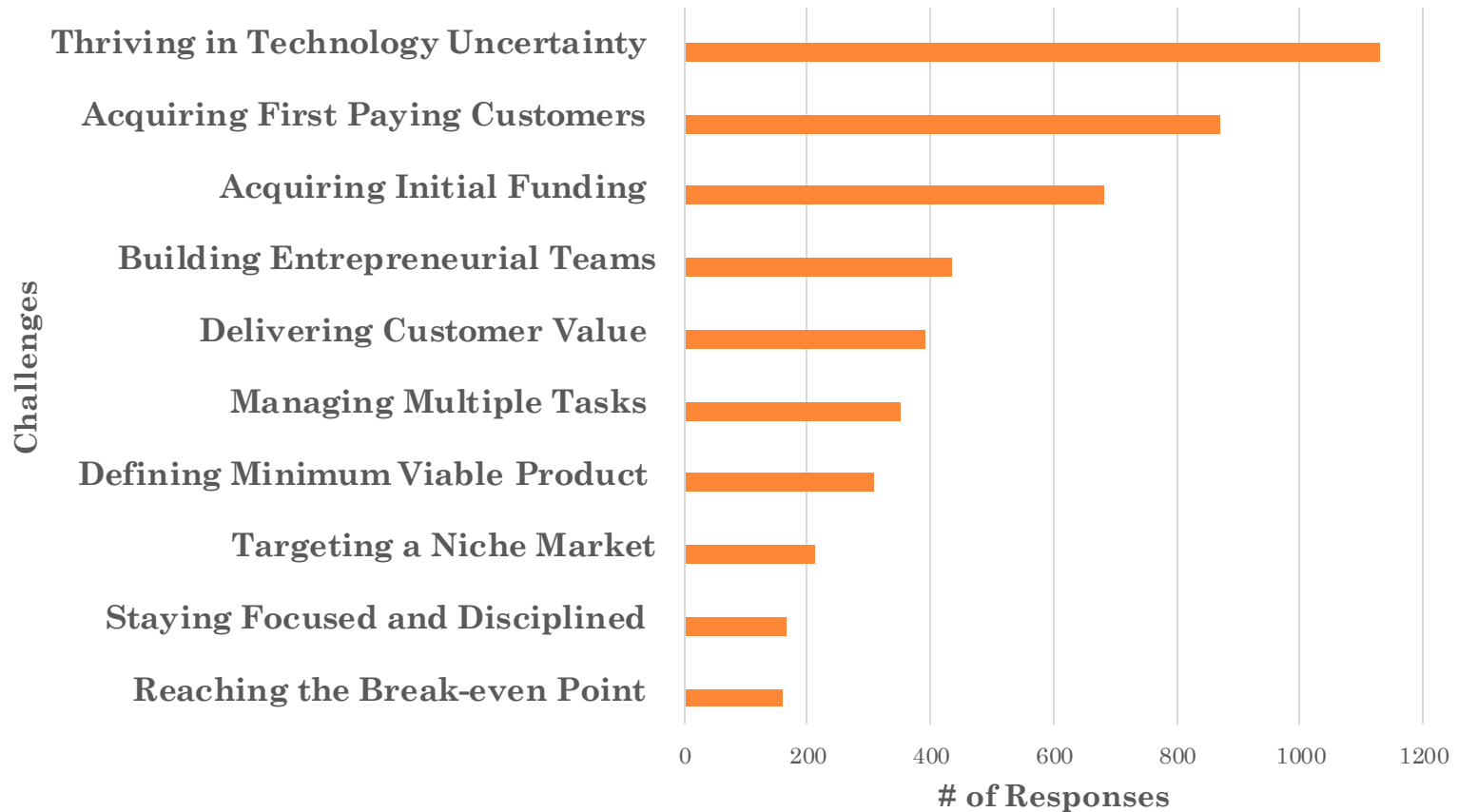| Description	# of Responses
# of responses received	8240
Complete responses (background information and perceived challenges)	5389 (65,40%)
List of top 10 challenges	Contained in 4709 responses, i.e.87,38% of the 5389 complete responses

- List of key challenges by frequency calculation.

Survey – 3/6

- 90 countries around the world
  - **United States 52,60%**
  - Canada 7,94%
  - United Kingdom 6,71%
  - Israel 5,30%
  - India 4,50%
- Cover different market sectors (predominately in the consumer market, such as **mobile and Internet, i.e. 64,40%**).
- Young, on average 10 months, and small in size, predominantly having 2 founding members.

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SURVEY – 4/6

List of top 10 key challenges of early-stage software startups

SURVEY – 5/6

- **63,98%** challenges are perceived during problem evaluation phase

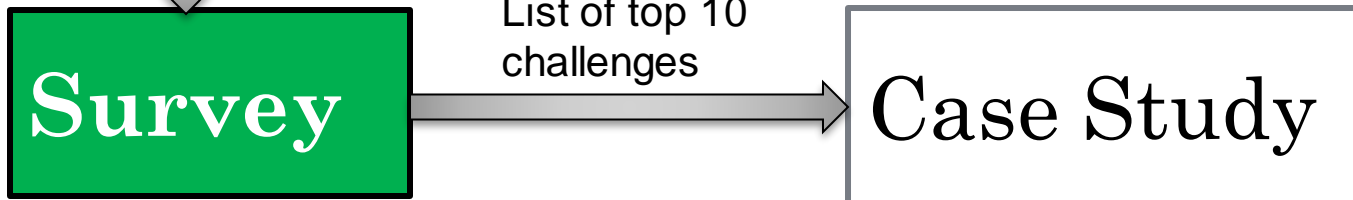- **48,23%** challenges are perceived when product become mature

Macmillan et al. Dimensions
and challenges(%)

Dimension	Challenges (%)
Market	31,32
Product	30,56
Financial	17.90
Team	20.22

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Survey

List of top 10 challenges

Case Study

CASE STUDY – 1/7

o Purpose: Achieve a deeper contextual understanding of the key challenges identified in the survey.

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Profile of two early-stage software startups

Profile	EasyMedicine	MovyNext
Idea/Business domain	Health	Entertainment
When started	Idea: July 2013, Development: November 2013	Idea: July 2012, Development: December 2013
No. of founding team members	4	4
Current composition of team	2 (Pharmacists), 2 (Businessmen)	1 mentor (from an incubator), 4 Software developers, 1 designer (Free lancer)
Current Product Development Stage	Mature	Prototype
Current Learning Process Stage	Solution evaluation	Solution Evaluation
Application Nature	Android Mob app	Website

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THRIVING IN TECHNOLOGY UNCERTAINTY

- EasyMedicine:
  - Manifested as lack of supporting technologies

  - *"Our search criteria to find medicine was not efficient. We wanted to implement multiple search criteria with optimized search within the database, but we were unable to implement it because of not enough resources available for these problems." (CEO)*

- MovyNext:
  - No specific strategy to attract paying customers:

  - *"You think that your product is cool. Friends are using it, and that's it. Paying customers are not coming. How to get this? that's a challenge" (CEO)*

CASE STUDY – 5/7
BUILDING ENTREPRENEURIAL TEAM

- Implies several challenges related to
  - teamwork and team motivation
  - appropriate composition of the team
- EasyMedicine:
  - It was about keeping people involved:

  - *"We did not update our developer for the past two months. We lost him and he took another assignment. He is not available anymore". (CEO)*

- MovyNext:

  - *"We are all computer scientists. There is no one, who work on user experience. To build product/feature, this is one part of the business. You need people, that market it, sell it, reach to customer, perform user based experiment. In our case, we don't have them."* (CEO)

CASE STUDY – 7/7
ACQUIRING INITIAL FUNDING

- EasyMedicine:

  - *"It's a challenge especially in a small city. There are not so many people to invest in startups if there is not a clear product/business plan. In software business, it is more challenging. You can create, change, and revolutionize several times. There were many apps similar to our app in our case"* (CEO)

DISCUSSION

- No *validated learning* process to identify the real need of the customers
- High number of challenges in problem evaluation phase
- Investing resources in ineffective practices.
- Identifying the valuable but missing knowledge early in the project

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CONCLUSIONS

- An initial explanation of the key challenges in early-stage software startups

- Top challenges:
  - Thriving in technology uncertainty (**21,01%**)
  - Acquiring first paying customers (**16,14%**)

- Lack of validated learning process

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FUTURE WORK

- Relationship between described challenges, and other factors (e.g. user growth rate)

- Improving validated learning processes

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[1] Sutton, Stanley M. "The role of process in a software start-up." IEEE Software 17.4 (2000): 33-39.

[2] Nobel, C.: Why companies fail-and how their founders can bounce back. Working Knowledge, Harvard Business School, Boston, available at: http://hbswk.hbs.edu/item/6591.html (accessed 29 August 2013) (2011)

[3] Paternoster, N., Giardino, C., Unterkalmsteiner, M., Gorschek, T., Abrahamsson, P.: Software development in startup companies: A systematic mapping study. Information and Software Technology forthcoming.

THANK YOU!!