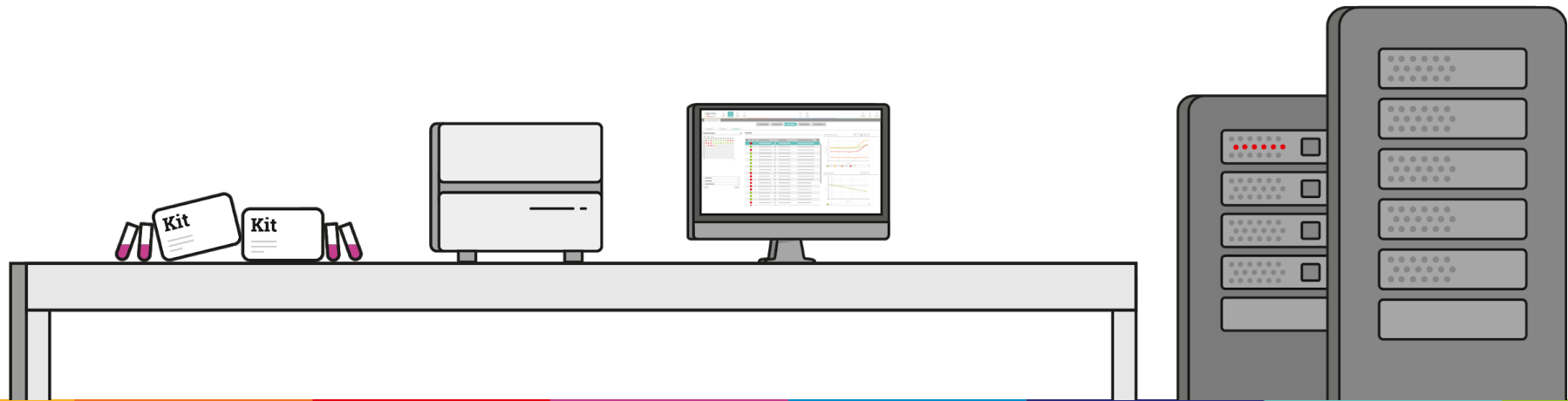


# Technologie and Entrepreneurship: Case Studies UgenTec

Steven Verhoeven, CEO UgenTec



Automating and standardizing  
molecular diagnostics  
with artificial intelligence

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UgenTec



# PCR laboratory workflow

Extraction



Robotics

Set-up



Robotics

Amplification



Robotics

Results



Scientist

# FastFinder

Automated PCR analysis

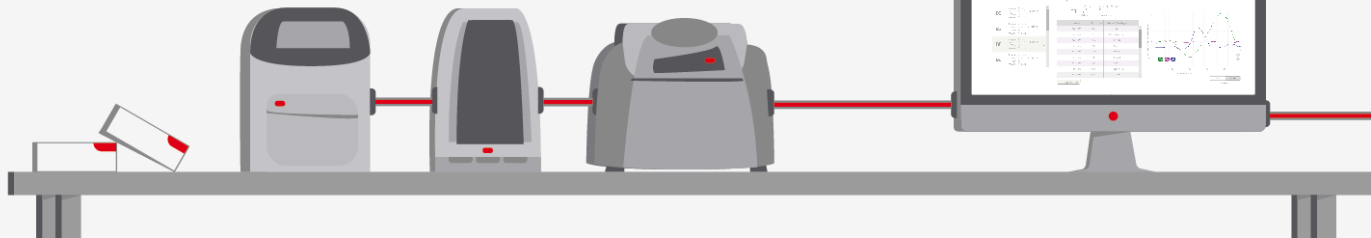
Artificial intelligence to automate & standardize routine diagnostics

Any test the lab uses

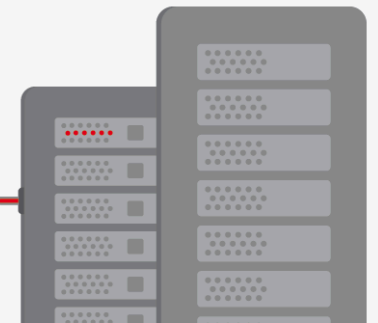


Our software automatically analyzes the results

Any device they have installed



Outputted to information management systems

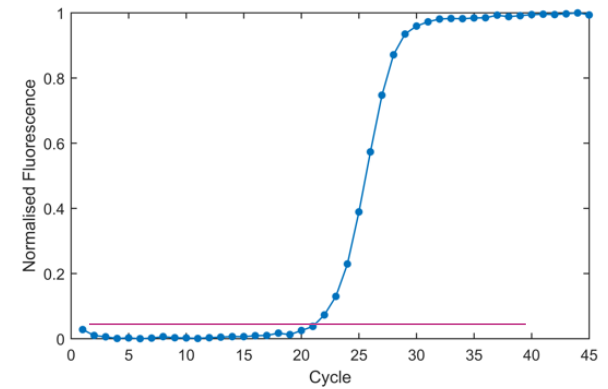






### Simple algorithm

*Signal = 1 → beep*



### Thresholding

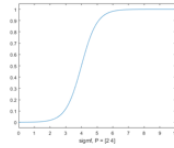
*If fluorescence passes threshold → positive*



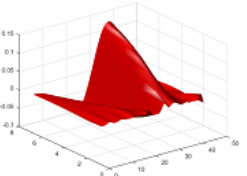
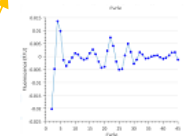
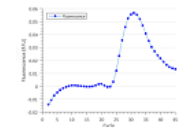
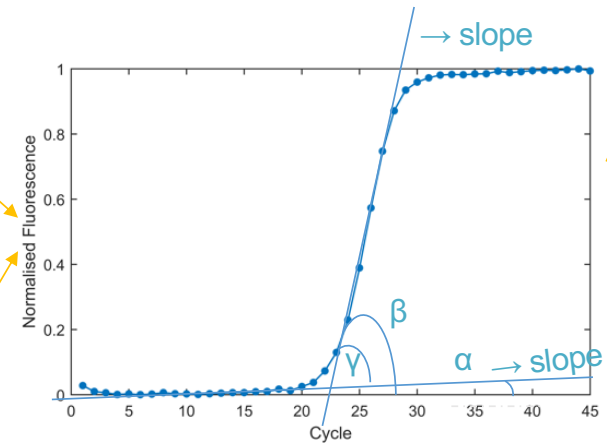
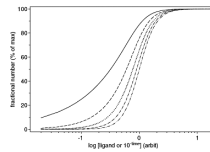
Machine learning

Scan multiple objects, detect traffic situations intelligently

$$F_x = \frac{F_{max}}{1 + e^{\left(-\frac{1}{b}(x-c)\right)}} + F_b$$



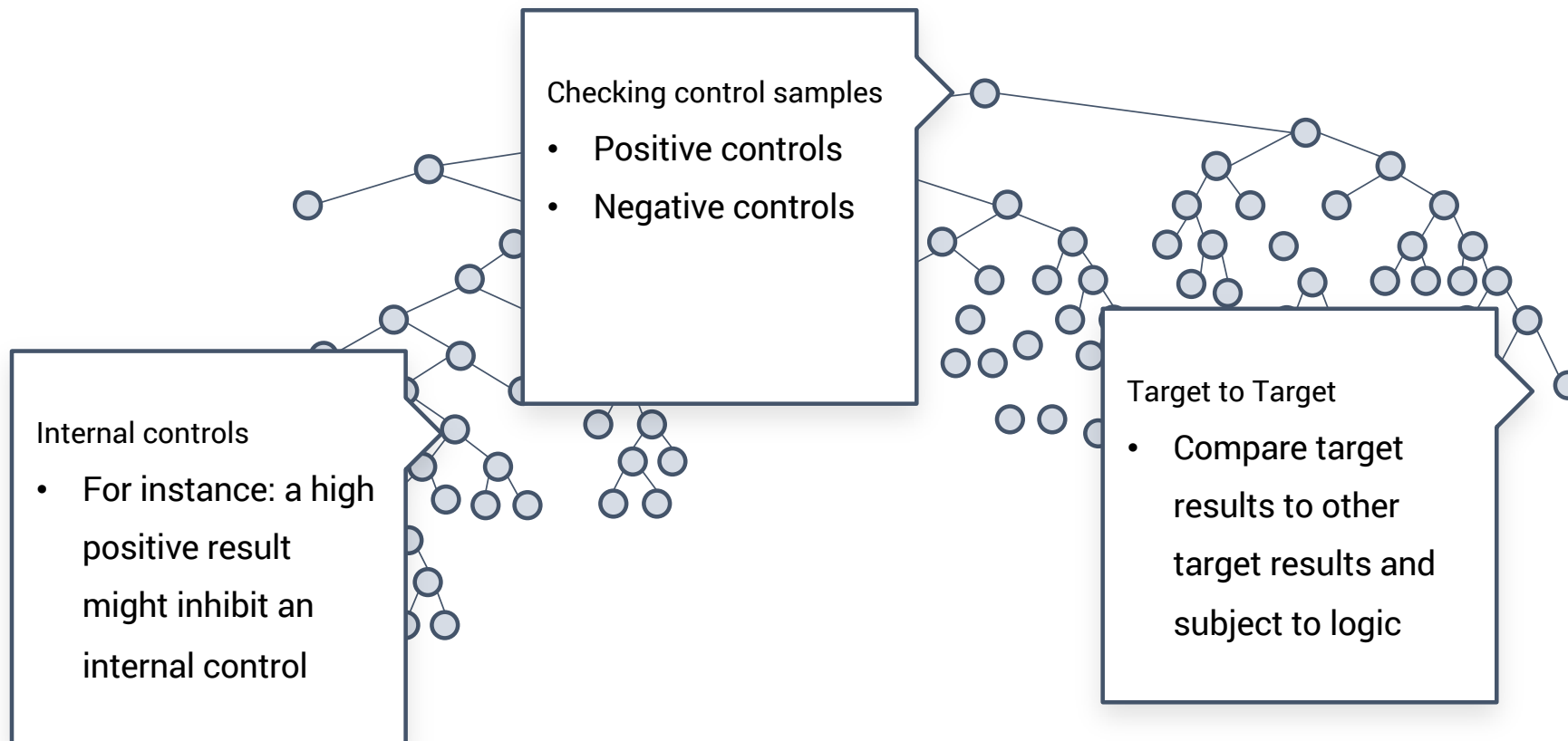
$$F_x = \frac{F_{max}}{[1 + e^{\left(-\frac{1}{b}(x-c)\right)}]^a} + F_b$$



FastFinder

Slope, noise, Ct calculations, measures derived from academic literature, mathematical transformations, decompositions,...

# From signal to actionable information



Algorithms

Rules

Assay plugin

FastFinder



An algorithm

Workflow specific  
details



One assay-specific plugin



A set of rules

Standardized

Automated

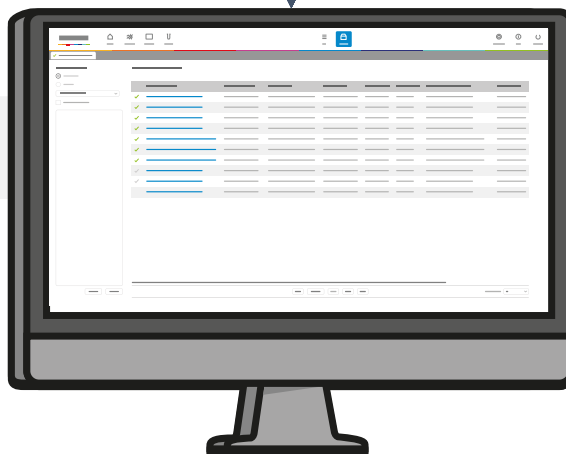
Validated

Algorithms

Rules

Assay plugin

FastFinder

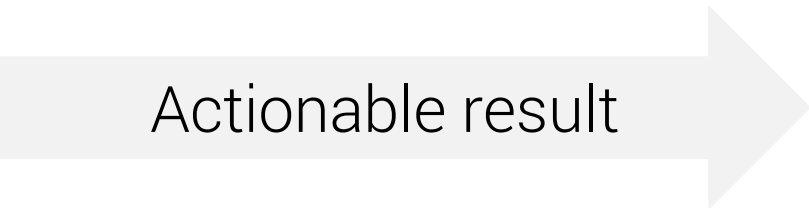


Integrated QC

Actionable result

Integrated with LIMS

Raw data




# Company Introduction 2019

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UgenTec





Our mission is to simplify the way diagnostic laboratories work across the globe.

# Why?

Order management

Sample prep

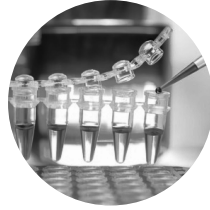
Liquid handling

Amplification

Analysis

Interpretation

Reporting



Samples forgotten

Wrong extraction kits

Manual plate config.

Wrong PCR protocol

Sensitive chemistry

Complex tests

Manual data entry

No barcoding system

Samples mixed up

Queuing for *efficiency*

Wrong PCR device

Ambiguous data

High throughput

Convolut ed custom software

Samples lost

Wrong protocol

Wrong samples on same plate

Inefficient system use

Inter/ intratechnician variance

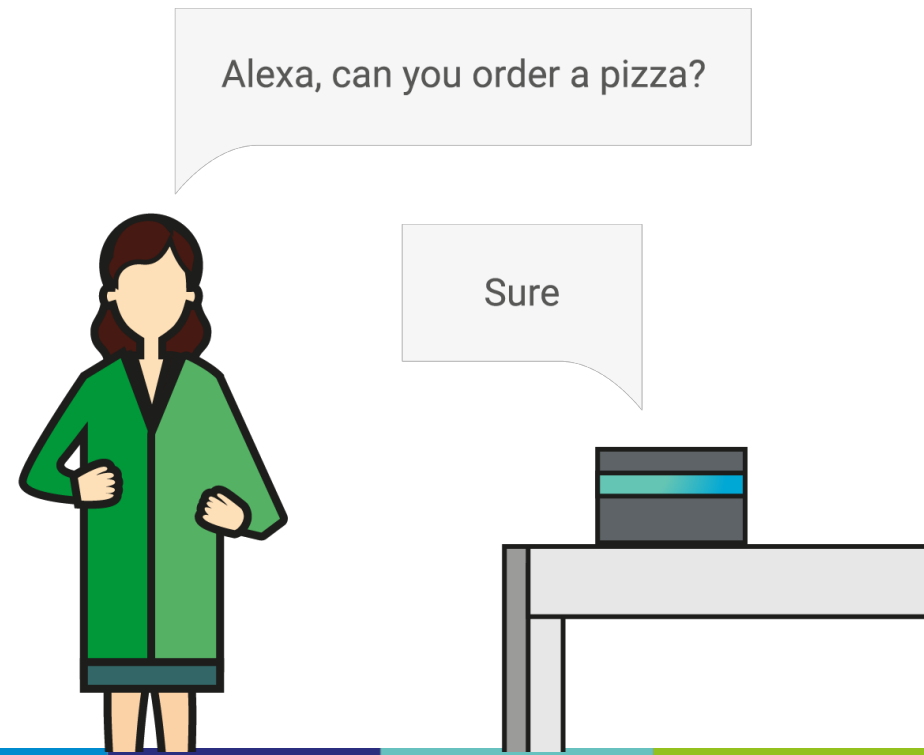
Retesting

Convolut ed spreadsheets

No history of data



While the  
entire world is  
increasingly  
connected,  
smart &  
automated

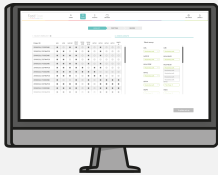


Laboratories are left with  
spreadsheets,  
macros &  
manual interpretation



# The platform for digital labs

Workflow Automation



 FastFlow

Integrated Workflow  
Lab Control Center

AI Driven Interpretation



 FastFinder  
 FastTyper

Results, QC follow up & LIMS  
reporting

Intelligence



 FastMiner

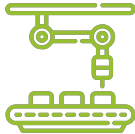
Cross-site reporting  
Business intelligence  
Predictive Monitoring



Human and Veterinary  
Diagnostics



Food and Agricultural  
Testing, QC and Breeding

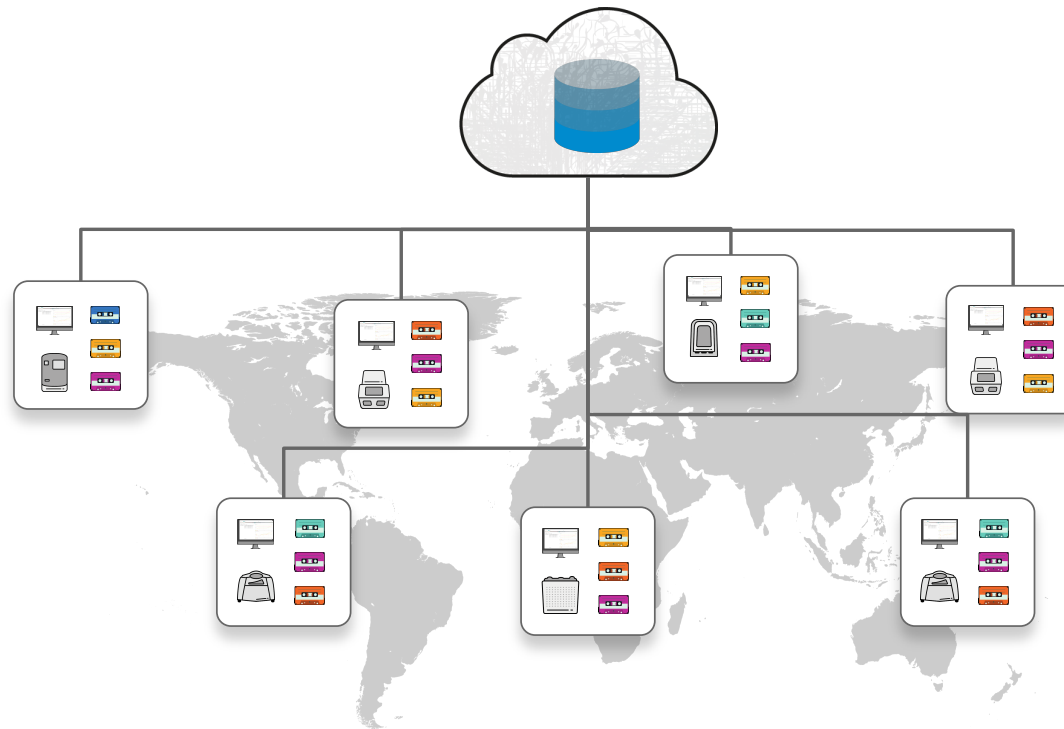


Robotics



# New business models, better intelligence & new products

- Customer Success Channel
- On-line Support
- Automated re-ordering



- Sales Forecasting
- Production & Inventory Management
- Epidemiology

# A trusted partner.



Help labs deal with complexity



Rollout large, compelling menu



Save valuable resources for labs



Manage global, compliant rollout



>100 laboratories in 35 countries

20 common PCR devices supported

>500 assay plugins automated



# Secure. Validated. Global.

UgenTec focuses on building secure hosted solutions, so data is always safe, private & fast.

Hosted across the  
globe on



Certified quality  
management system



CE-IVD, IVDR & FDA  
processes in place



# Key messages

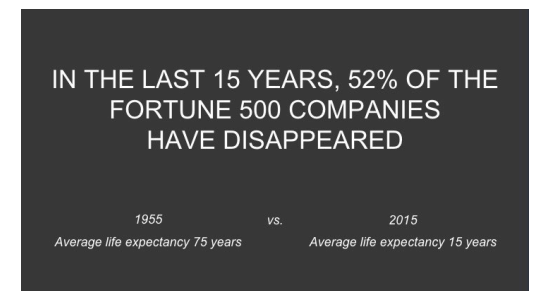
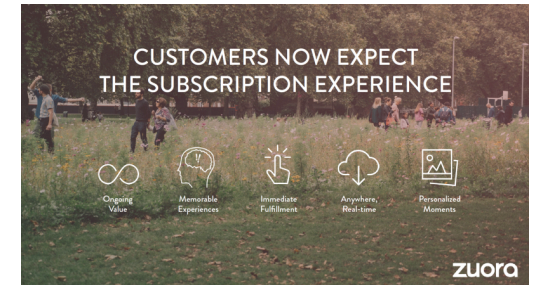
- From point solution to platform approach
- From start-up to proven company
- Much less focus on technology

Tune your Pitch



# Textbook example - Zuora

- Name a Big, Relevant Change in the World
- Show There'll Be Winners and Losers
- Tease the Promised Land
- Introduce Features as “Magic Gifts” for Overcoming Obstacles to the Promised Land
- Present Evidence that You Can Make the Story Come True



Optimize your Go-to-  
Market Strategy

# Valorisation

Customer Lifetime Value

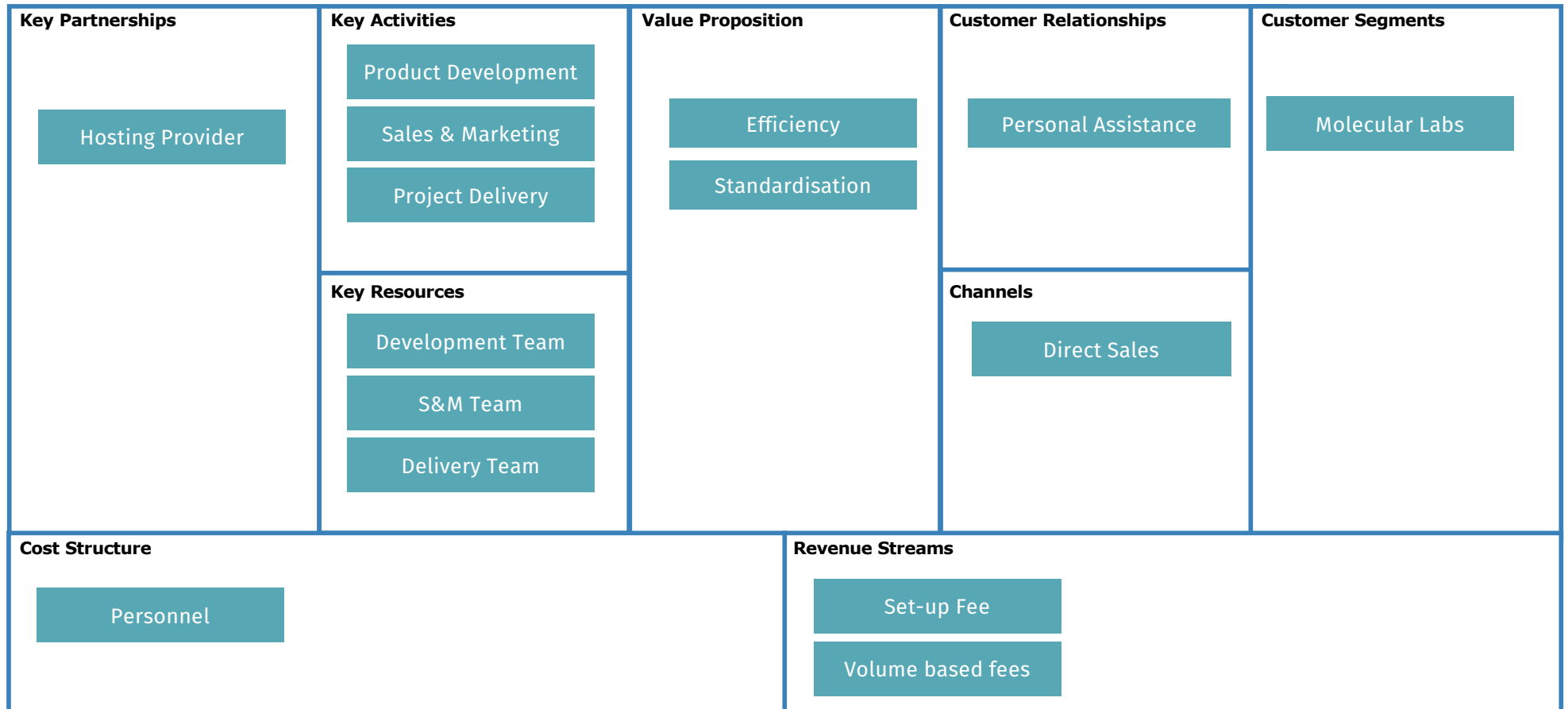


Customer Acquisition Cost

> 3 ?

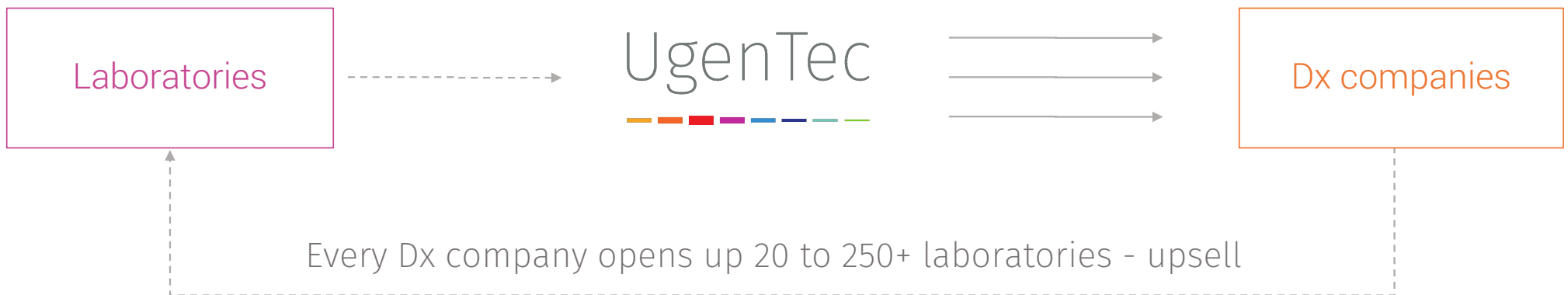


# Business Model - Molecular Labs

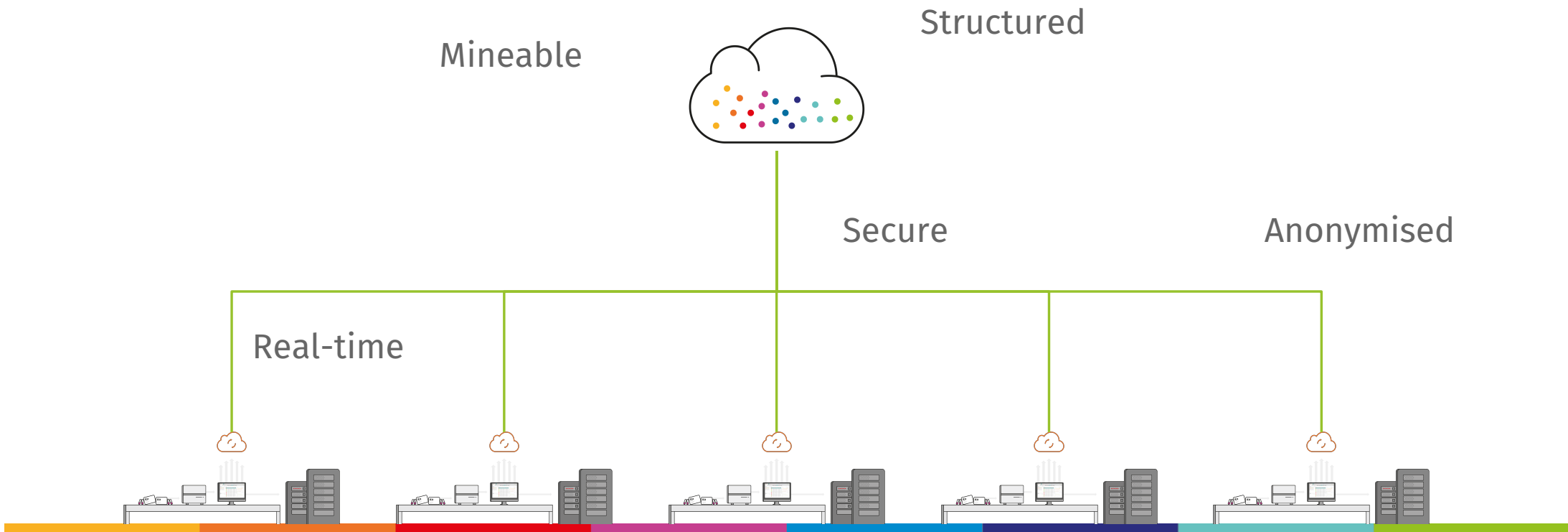


# Leverage existing sales networks

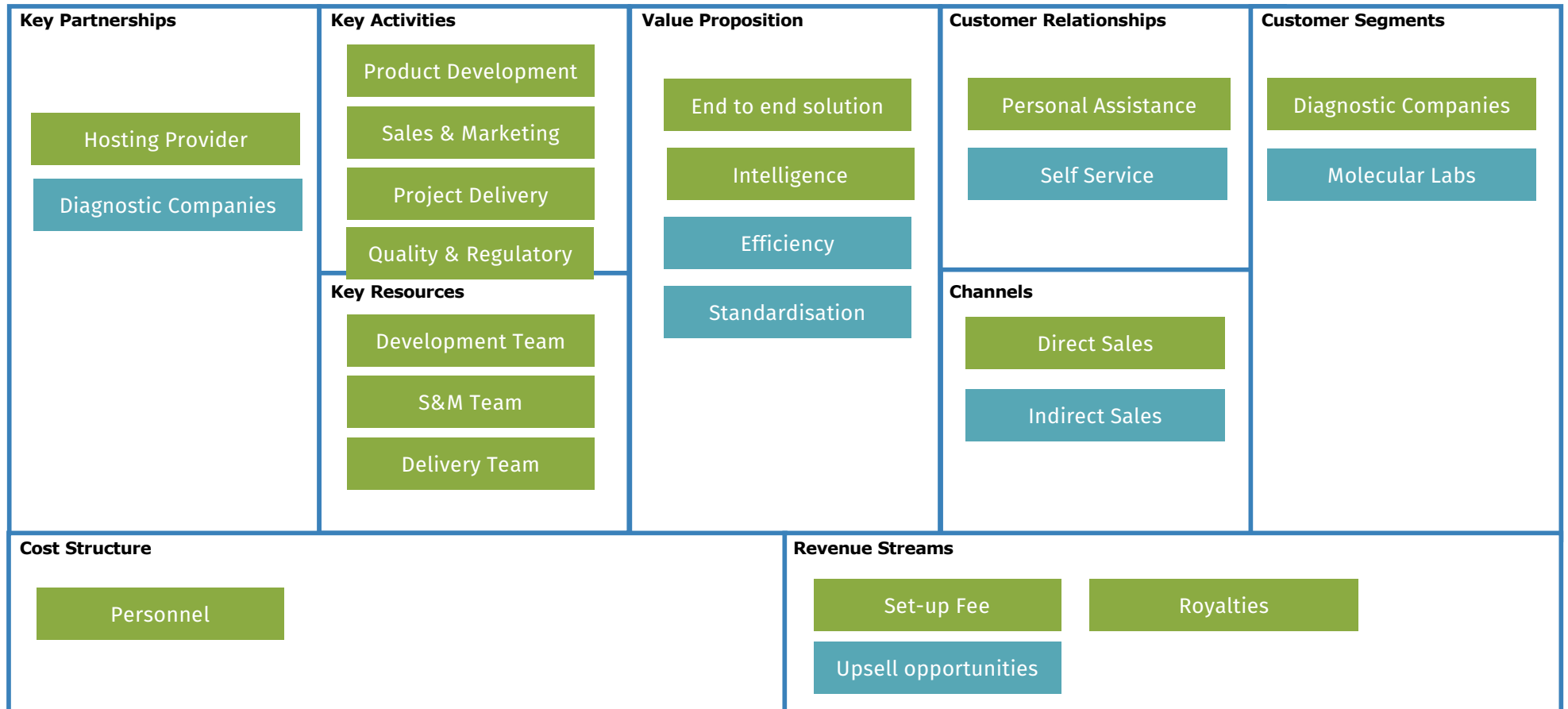
FastFinder + commercial tests = end-to-end solution



Automation will unveil previously impossible products & ways of thinking



# Business Model - Diagnostic Companies



# Lessons Learned

Build success stories



⚡ Don't try to be everything at once



Go to market influences your entire organization

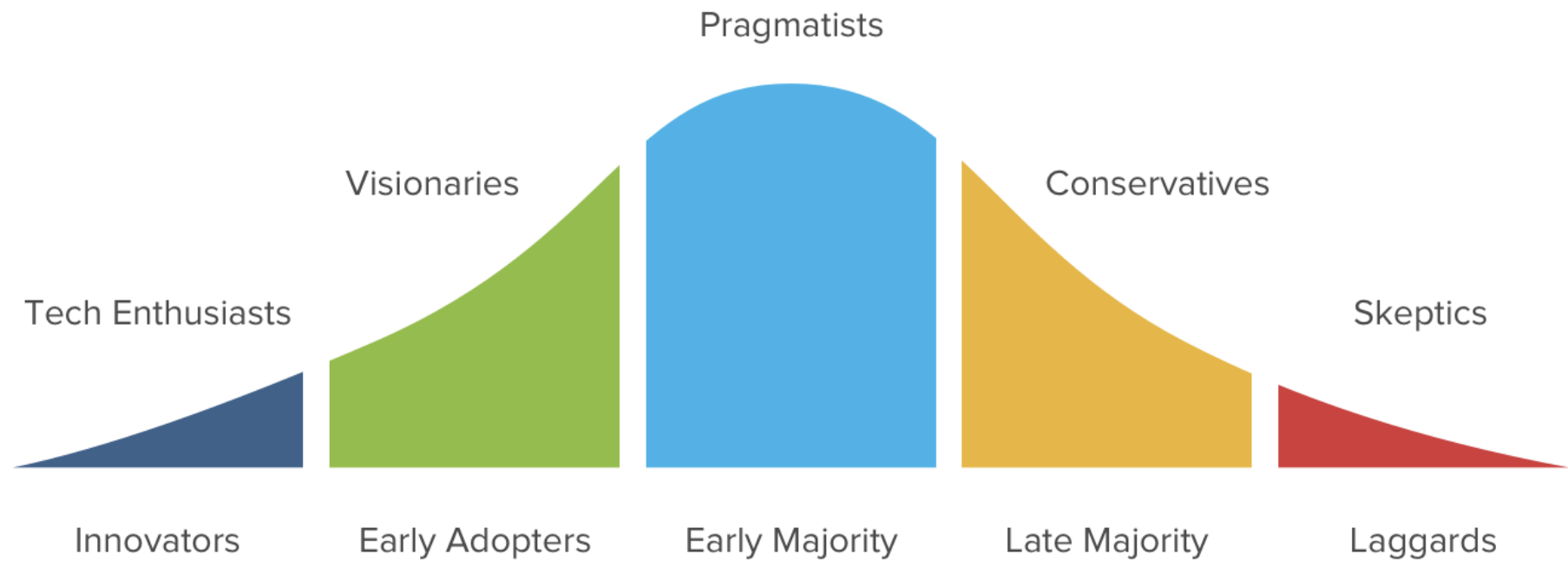
Early choices are hard to change



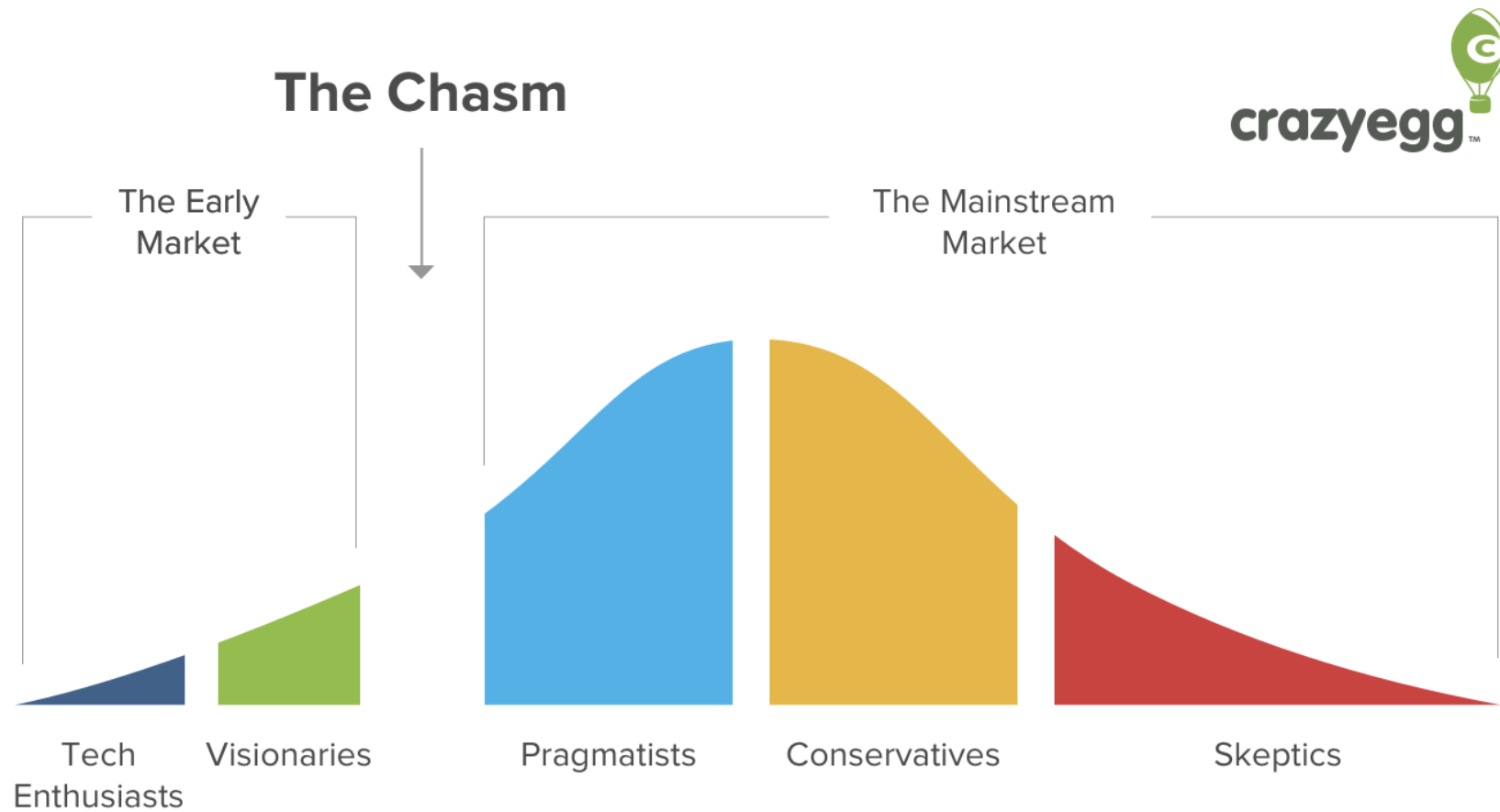


Watch the Chasm

# Technology Adoption Lifecycle



# Technology Adoption Lifecycle -



# The solution – D-day analogy

- Select a beachhead
  - Compelling reason to buy
  - Big fish, small pond
- Assemble the invasion force
  - The whole product: think through your customer's problems in their entirety
  - Software, training, change management, etc.
  - Provided in-house or through partnerships
- Define the battle
  - Define competitive landscape
  - Focus all communication on validity of your competitive claim
- Launch the invasion
  - Direct sales force focused on consultative selling

Source: Crossing the Chasm, Geoffrey A. Moore

Questions?