A Roadmap for the Future
Technology as an Enabler

The Future of Business Software

Broader technology vision or adapt to current societal changes

- Long-living visions show clear direction that goes step-by-step
  - › Progress made using latest technologies to close gap between vision and reality
  - › SAP/ERP/HR good example as will not see a lot of changes over a 10 year span
  - › Infrastructure a good example, cloud computing first innovation in 10 years
- Societal changes focusing on programming to business and society trends
  - › Connected world: Good and bad instantly available & impacts brand/reputation
  - › SoFi and Rocket Mortgage examples of meeting a societal need
  - › Expect "machines" to connect them to right house, right time with right financing
- Hyper-connected world
  - › Emergence: The customer now has control of our organization
  - › Monetize data streams: network-based businesses will drive economic growth

Competing in the Hyper-connected World

Identification and classification of business objectives

- Inventory legacy systems, data needs and data outputs
- Sunk costs, carrying costs and turnover (maintain, invest or sunset)

Information quality

- Centralized data warehousing, data certification and data analysis
- What information is needed to support decision-making activities

User-focus development methodologies

- User profiling: a <u>profound</u> understanding of <u>each</u> customer/prospect
- Identify products and solutions that best fit each defined group of users
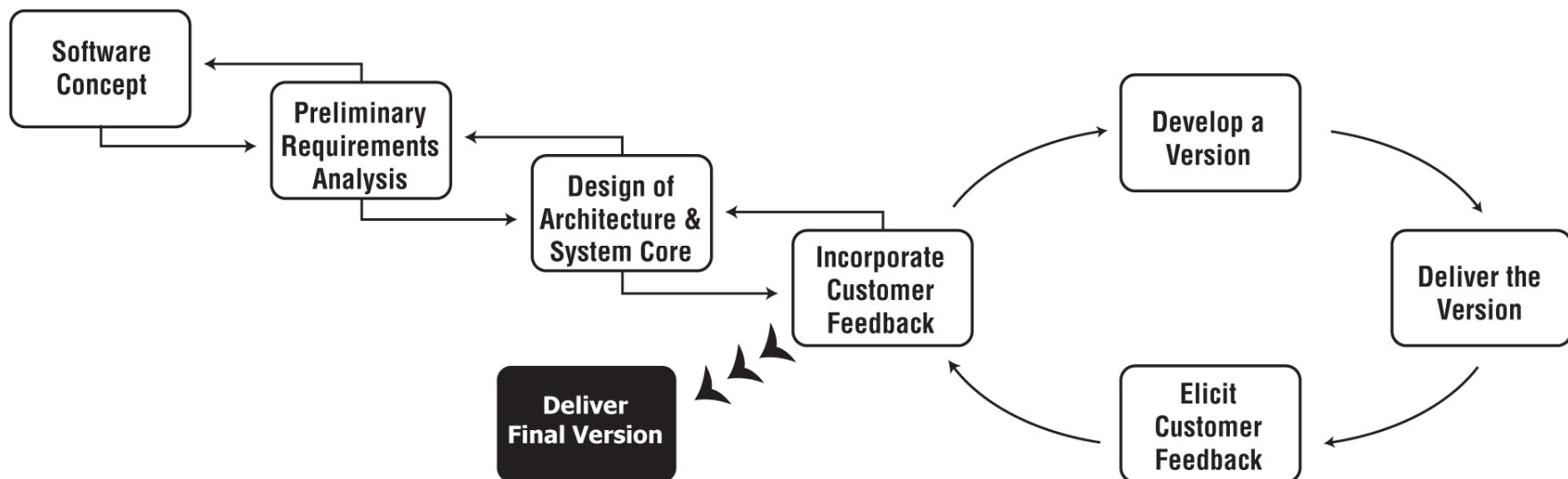- Ways of disseminating information (frequency, complexity, data updates)

Evolutionary Prototyping

Adapt to societal changes (prototyping)

- ✓ High level user involvement from start
- ✓ Enables early detection of errors/false starts
- ✓ Significantly reduces project risk
- × Users may want the prototype delivered
- × Hard to start over - build upon initial solution
- × Difficult to define scope of project

Broader technology vision (waterfall)

- ✓ Easy to understand, structured approach
- ✓ Milestones are well understood
- ✓ Greater accountability and project control
- × Escalating commitment to a losing proposition
- × Users see nothing until last step
- × Do not know all the requirements at beginning

The Need for Agility

Requirement elicitation and validation

- Accelerated delivery, early and frequent user engagement
- Developers learn from customers/prospects, making for accurate end product
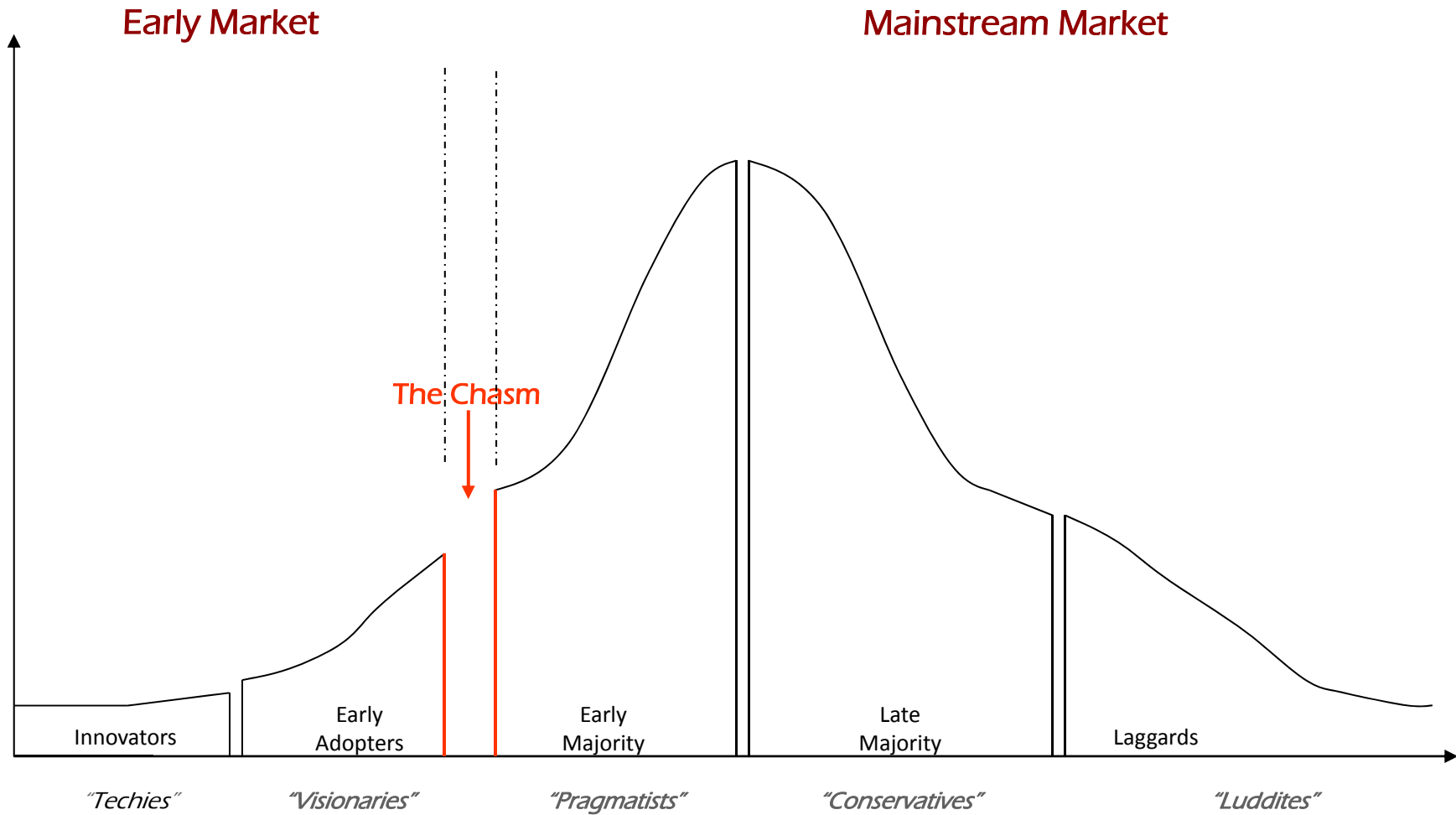- Flexible design and unexpected requirements are accommodated

OK to fail - fail fast, fail before scaling, fail before large investment

- Visible signs of progress or no progress with frequent (daily dev) check-ins
- Data mining captures information from users to refine the development process
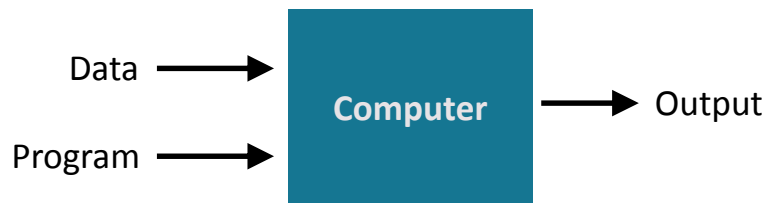
Reduce cycle time

- Improved productivity with fewer people involved = lower costs
- Minimize risk of not achieving customer satisfaction
- Requires good planning, design and understanding of functional requirements

Technology Adoption Lifecycle

Early Market

Mainstream Market

The Chasm

Innovators

Early Adopters

Early Majority

Late Majority

Laggards

"Techies"

"Visionaries"

"Pragmatists"

"Conservatives"

"Luddites"

Machine Learning

Traditional Programming

Machine Learning

Data → **Computer** → Output
Program →

Data → **Computer** → Program
Output →

Micro-targeting

- Create database of government, financial (loan) and sale data for each prospect
    - AWS Machine Learning for feature set deep learning, correlation and prediction
    - Data science helps recommend who to target, how to message and when to send
- Use historical refinance data to correlate features to go/no go decision
    - Back test models to determine feature sets and algorithms that predict best outcomes
- Monitor all data streams (IVR, web use, complaints, etc) for new features
    - Use to trigger chat invites, outbound calls, custom messaging, complaint remediation
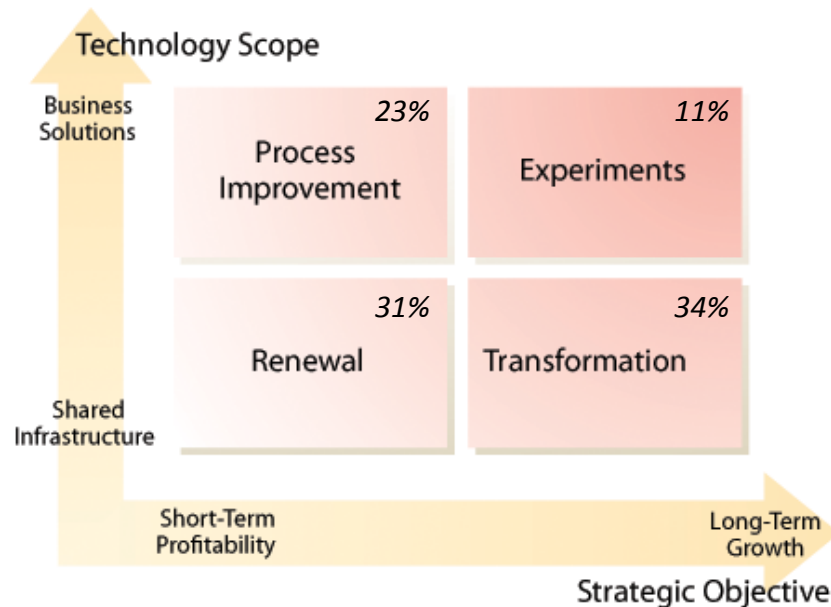
A Framework for I.T. Investment

Transformation = Core infrastructure that is inadequate for desired business model

Renewal = Opportunity to reduce cost or raise quality of IT services

Process improvement = Opportunity to improve operational performance

Experiments = New technologies, new ideas for products or processes, new business models

We need the crazy ones. The misfits. The rebels. The troublemakers. The round pegs in the square holes. The ones who see things differently.

We can't chase the competition. We have to leap-frog the competition.