CLOUD SERVICE BUSINESS PLANNING

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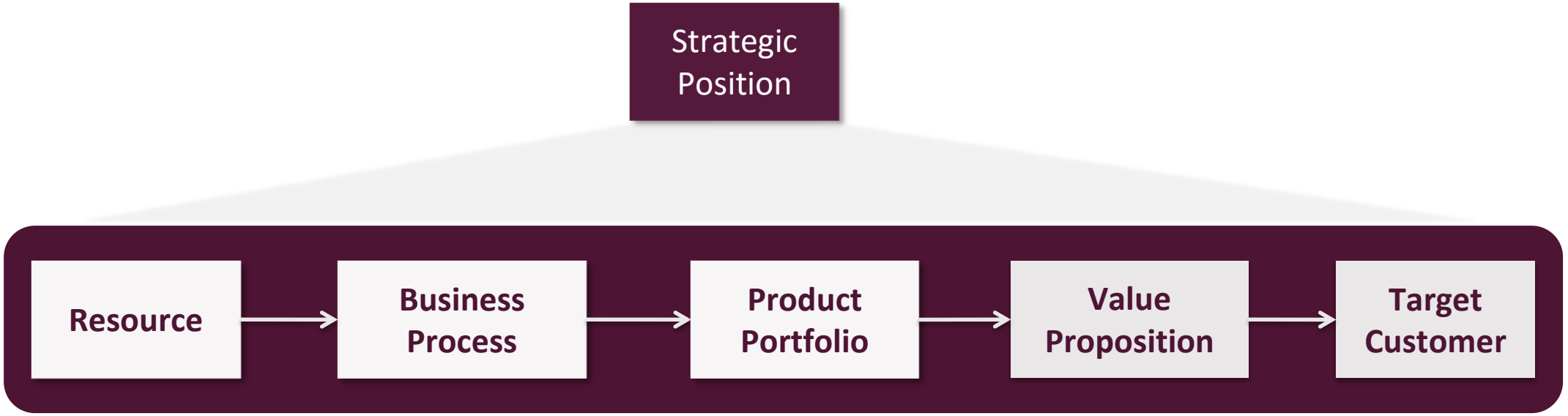
MODULE OBJECTIVE

- Learn how to plan your business strategy and design your business model.
- Learn an effective process of product development for SaaS.
- Learn an effective process of service development for CSB.
- Learn to produce a business plan.

BUSINESS STRATEGY AND BUSINESS MODEL

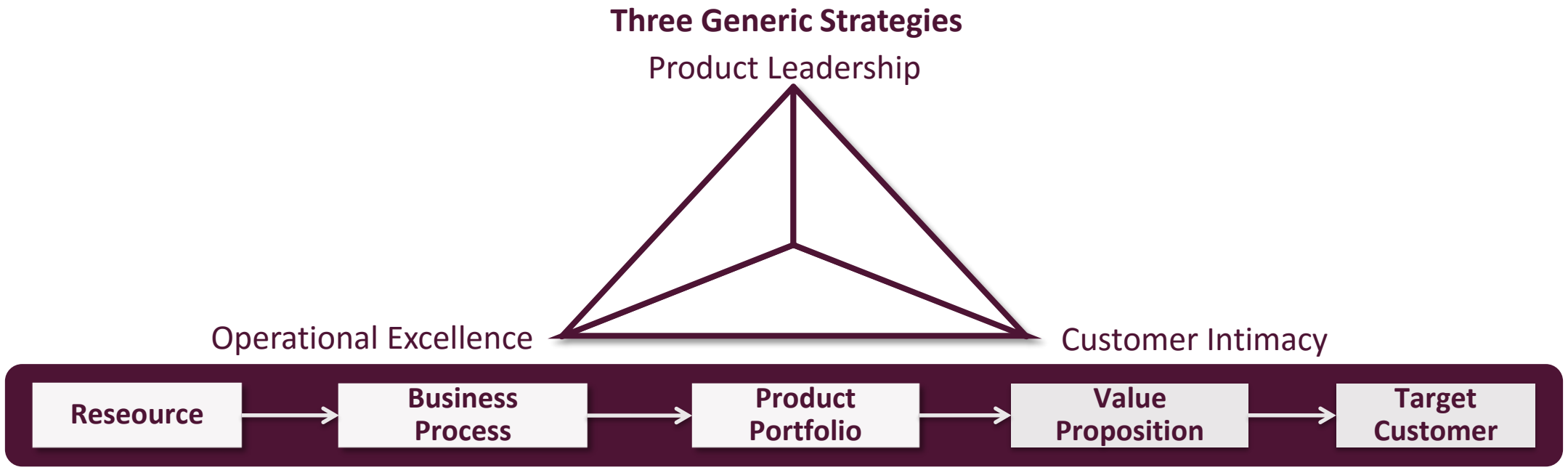
BUSINESS STRATEGY

- Strategic position determines where you want to be in the future in terms of your customers, value proposition, services, competitors, business assets and financial performance.
- Strategic planning is to determine your strategic position and choose a set of higher-order strategic initiatives designed to deliver it.
- Strategic initiatives help your company sustain competitive advantage in your market.



COMPETITIVE ADVANTAGE

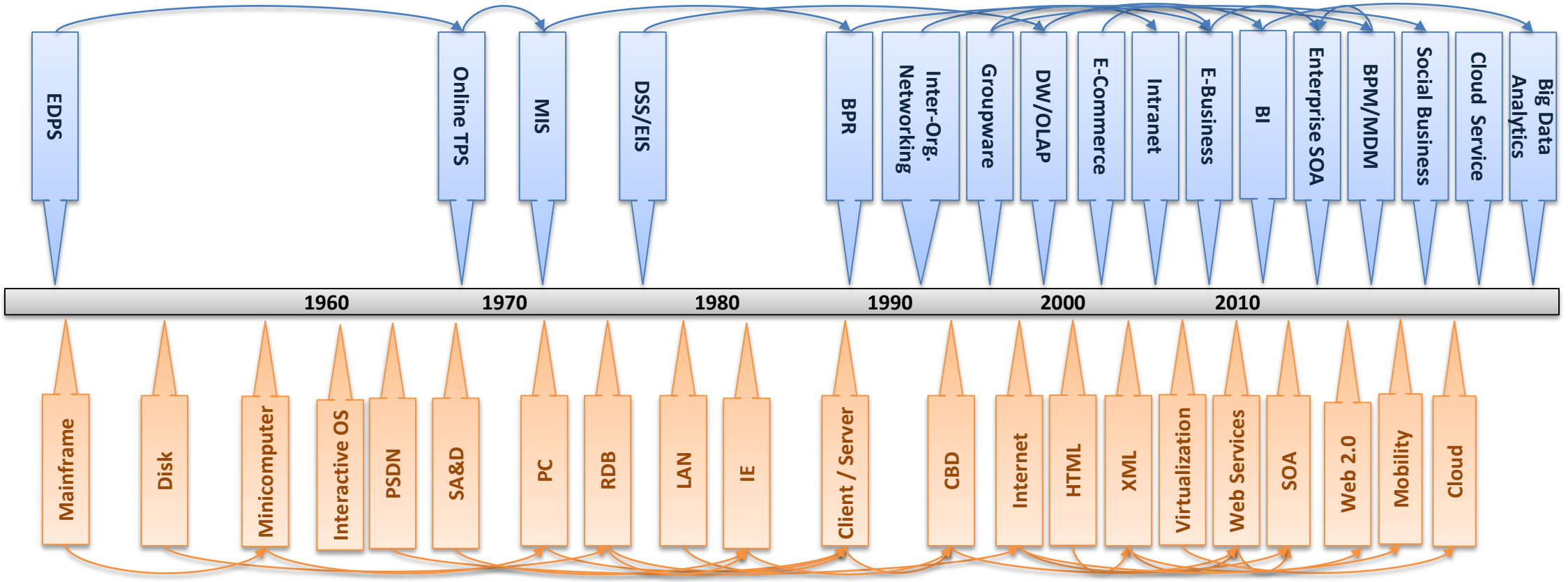
- Competitive advantage means your company makes better value proposition to the selected set of customers, and thereby makes more profit than your competitors.
- Three generic types of competitive advantages are: low cost, better product and loyal customer base.

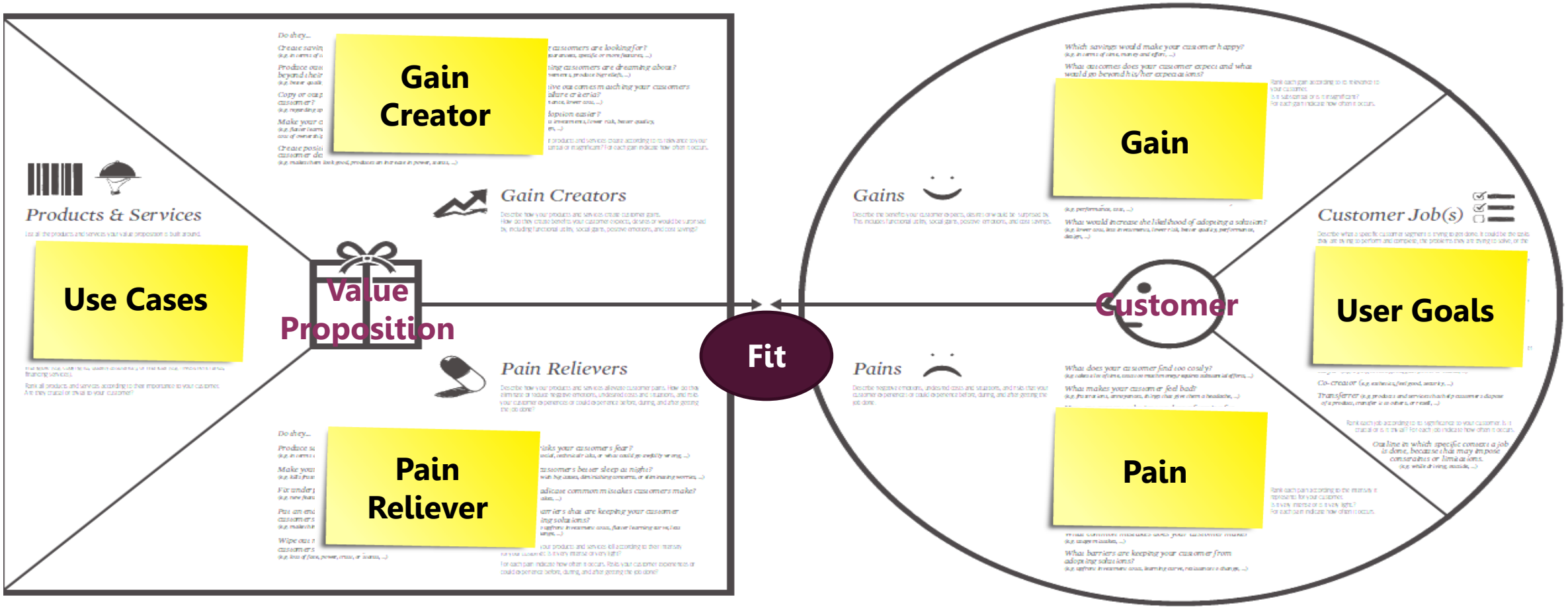


M. Treacy and F. Wiesema, The Discipline of Market Leaders, Addison-Wesley, 1995.

VALUE MIGRATION

- We are observing a pattern of accelerating value migration away from increasingly outmoded business asset portfolio toward others better to maximize value proposition for customers.
- You should ride on the value migration to sustain your competitive advantage and profit.





Value Proposition Canvas (http://www.businessmodelgeneration.com/canvas/vpc)

EXERCISE: CLOUD SERVICE BUSINESS PLAN

VALUE PROPOSITION CANVAS

Theme	User Story			Priority	Story Points
	User Class	Use Case	User Goal		
	As a	I want	so that		

User Story (http://www.agilemodeling.com/artifacts/userStory.htm) / EasyBacklog (https://easybacklog.com/)

EXERCISE: CLOUD SERVICE BUSINESS PLAN

USER STORY

BUSINESS ASSET PORTFOLIO

- Competitive advantage is achieved through business assets.
- Business assets should together make up the company's core competency that must align with the value proposition and support the strategy.
- Competitive advantage is more likely to arise from the intangible firm-specific knowledge which enables it to add value to the input factors in a relatively unique manner.
- Business assets—both tangible and intangible, both owned and un-owned—are sources of the enterprise' future value that determines its market capitalization.

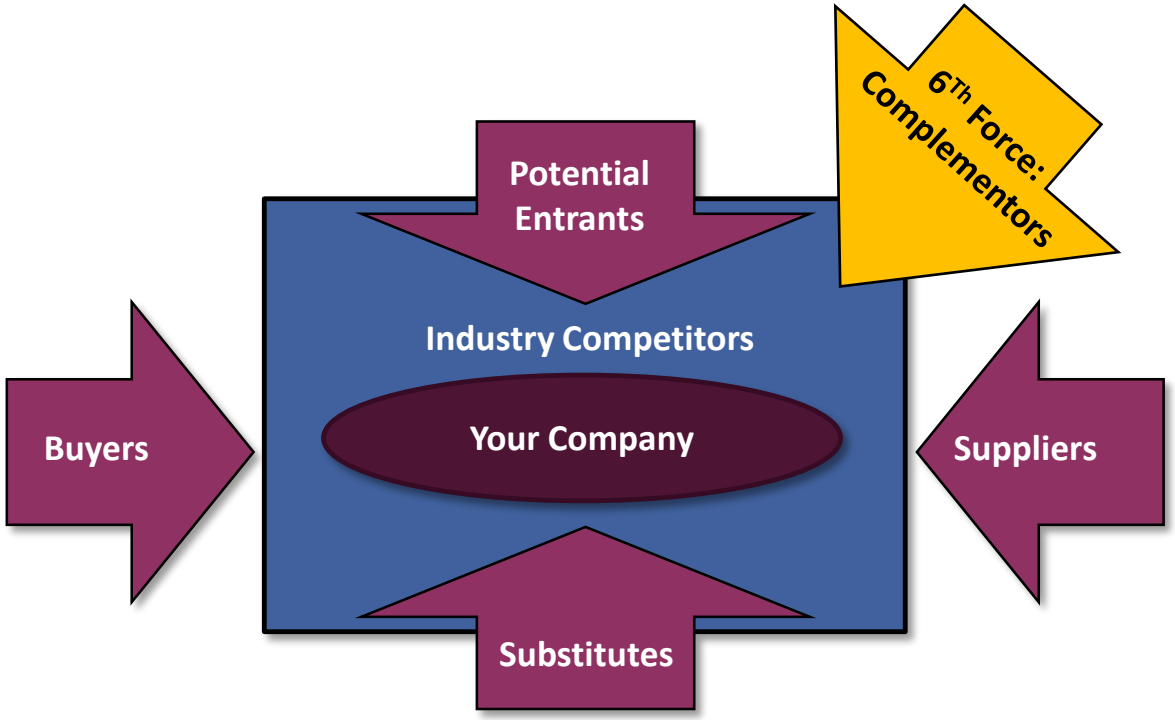
Business Asset Portfolio

R. Boulton, B. Libert and S. Samek, *Cracking the Vlaue Code*, HarperBusiness, 2000.

COMPETITION AND COLLABORATION

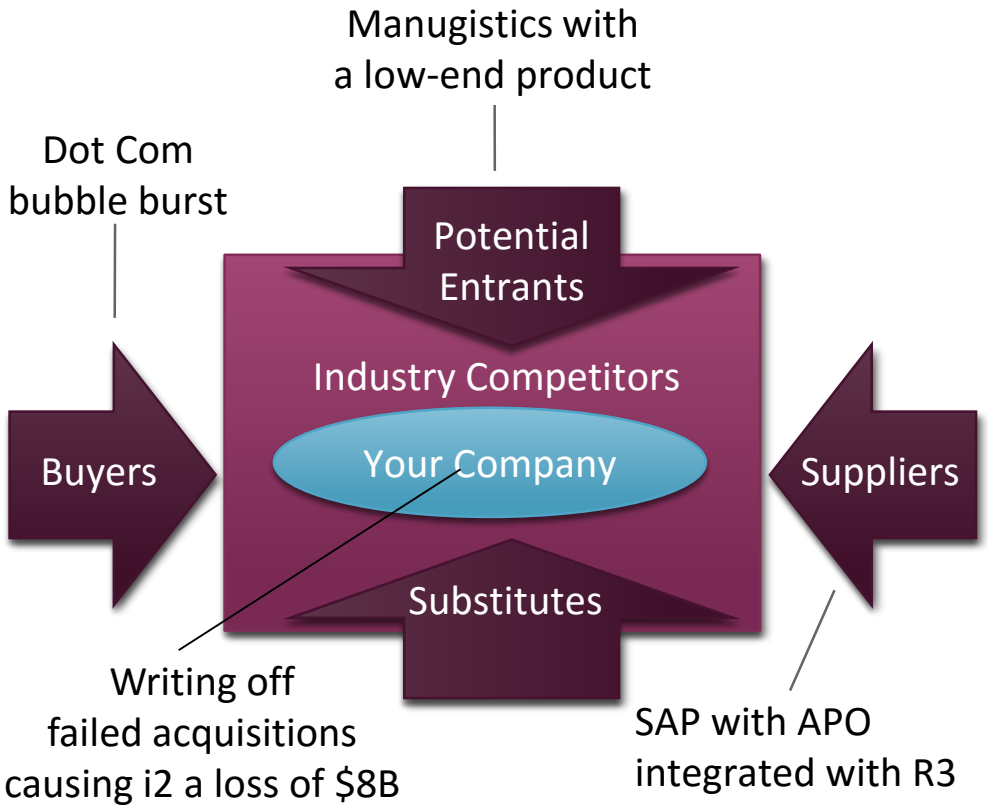
- Changes in the competitive environment forces your company to adjust its business strategy and business assets.
- Your competitive advantage is sustainable if your business assets and capabilities create distinctive value proposition to customers that is rare, hart to imitate, and irreplaceable.
- You should be able to fend off imitators, differentiate from new emerging substitutes, and keep the bargaining power of both customers and suppliers low.
- You should also collaborate with complementors and create a positive feedback effect.

Michael Porter's Five Forces Model Driving Industry Competition



M. Porter, Competitive Strategy: Techniques for Analyzing Industries and Competitors, The Free Press, 1980.

- Faced with Dot Com crash and increased competition from SAP and Manugistics, i2 turned to tailoring its products and offering consulting and other services for specific customers to give it an edge over competitors, often bearing the service cost itself.



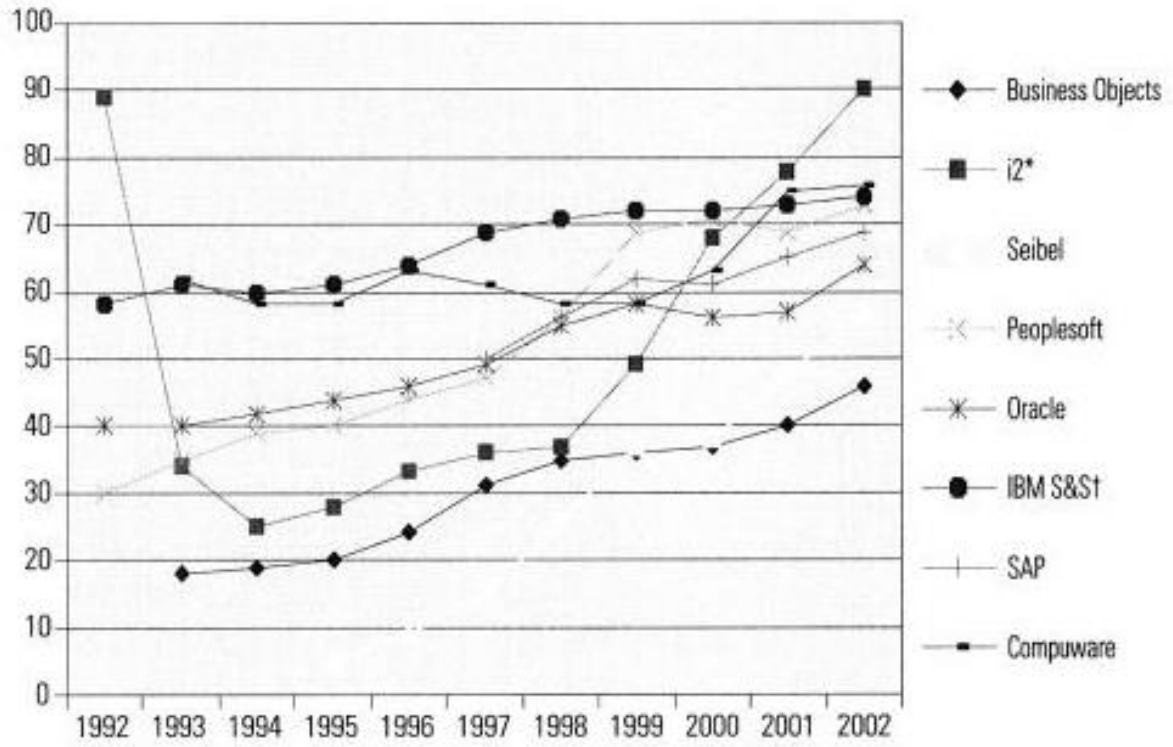
Michael A. Cusumano, The Business of Software, Free Press, NY, 2004.

CASE STUDY: FIVE FORCES MODEL OF COMPETITION

i2 Technologies

- Licenses portion of i2's revenue fell from 75% in 1994 down to 20% in 2001.
- Its stock price had gone from $20 in 1996, to $111 in 2000, and then to 41 cents in 2002.
- i2 did not establish repeatable sales, maintenance, upgrade and customer engagement processes that become essential as the company passes beyond the start-up phase.
- i2 did not standardize and improve its software architectures and agile software development disciplines.
- As a result, it cost i2 $9 for every dollar of sales in 2001.
- JDA Software purchased i2 at $400M in 2010.

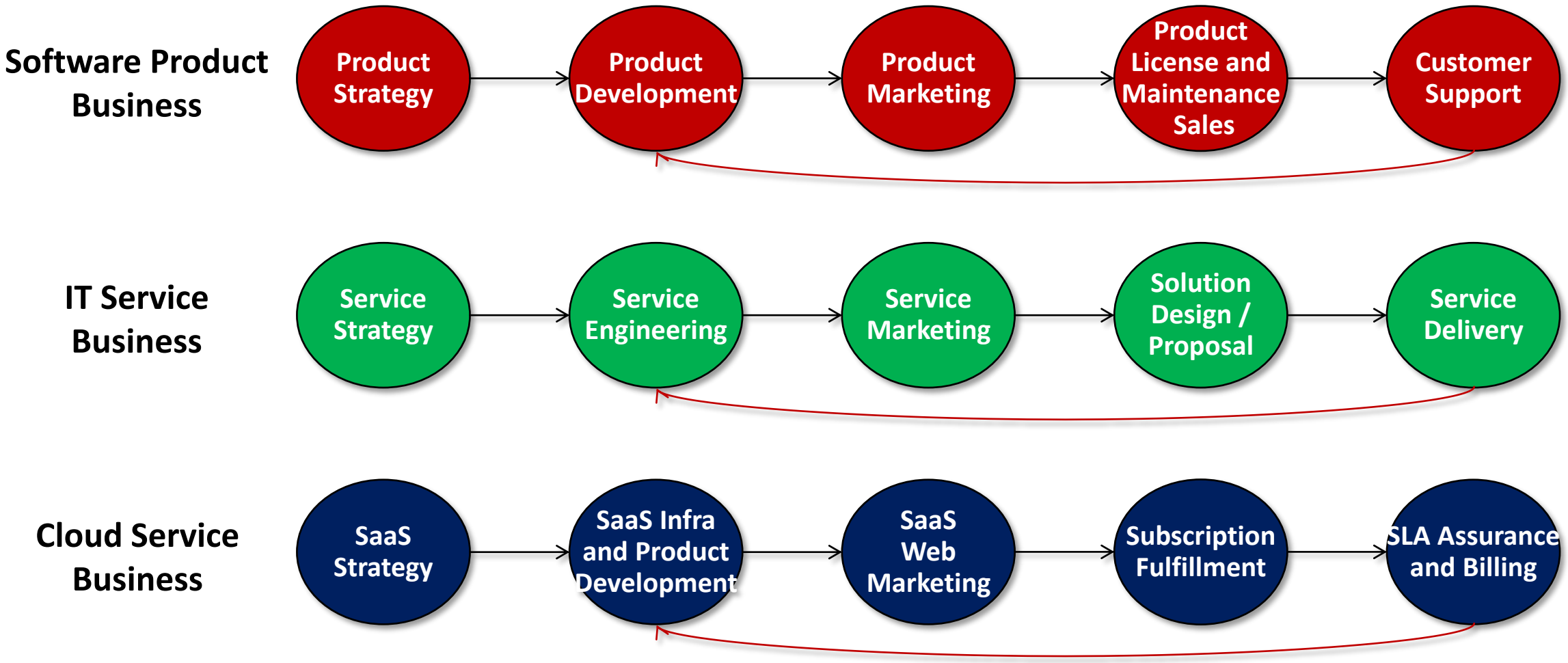
Service Revenues as % of Total Revenues



CASE STUDY: FIVE FORCES MODEL OF COMPETITION

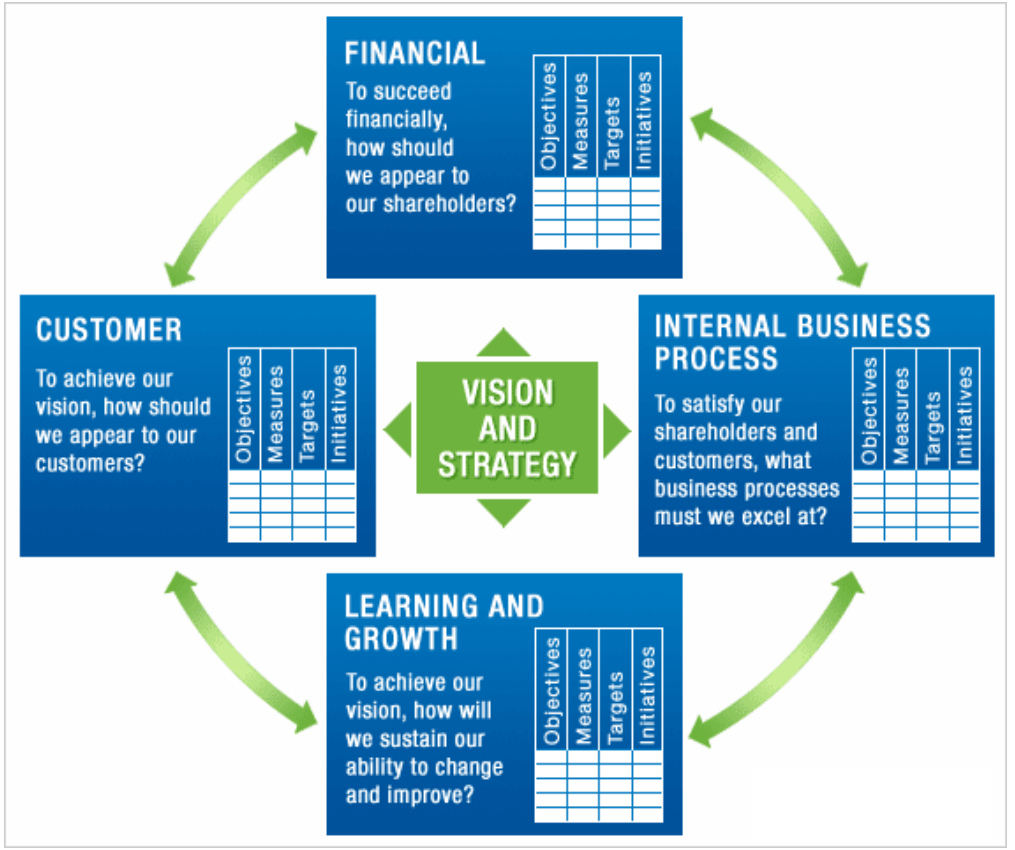
i2 Technologies

BUSINESS PROCESS

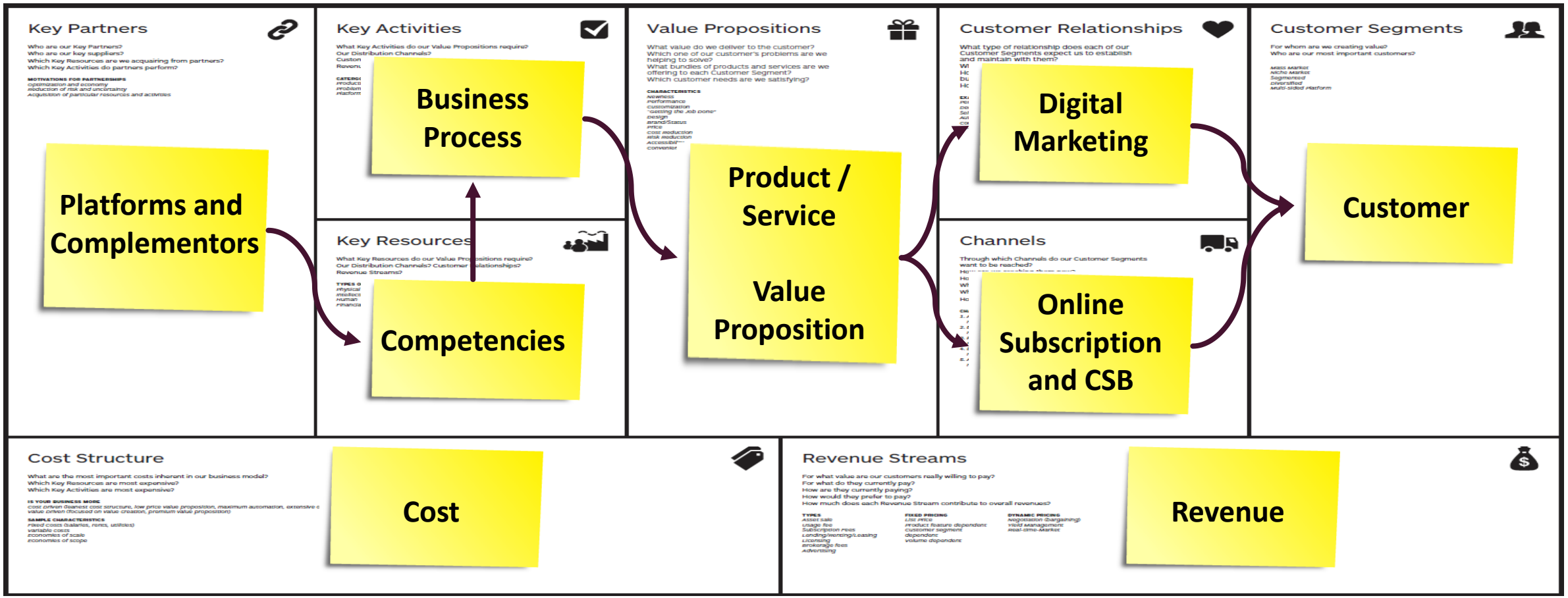


KPI AND BALANCED SCORECARD

- Once strategic position is determined, set clear strategic goals (or critical success factors) and strategic metrics (key performance indicators).
- KPIs should measure values of both tangible and intangible assets, and performances in both short-term and long-term horizons.
- Both external metrics (customer-facing metrics) and internal metrics (leading indicators) should be monitored.
- Balanced Scorecard approach recommends that management track four types of measures: financial, customer, internal process, and innovation and learning measures.



R. Kaplan and D. Norton, "The Balanced Scorecard—Measures that Drive Performance," Harvard Business Review, Jan. 1992.

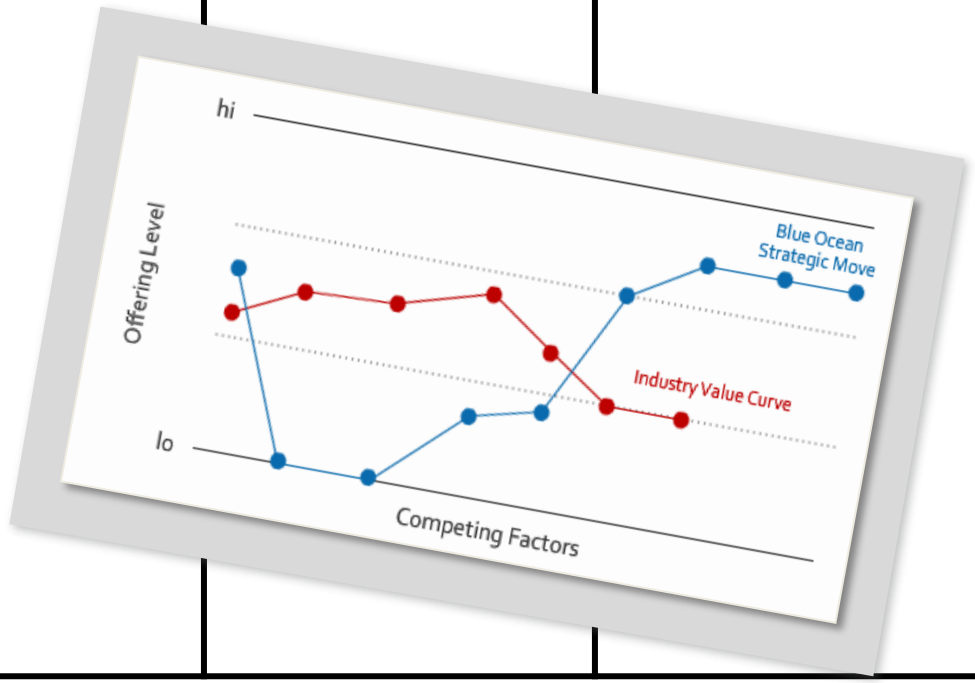


Business Model Canvas (http://www.businessmodelgeneration.com/; https://strategyzer.com/)

EXERCISE: CLOUD SERVICE BUSINESS PLAN

BUSINESS MODEL CANVAS

- Describe the cloud service that you plan to develop

Target Customers (Profiles)	Product Features (Use Cases)	Incumbent Competitors, Potential Entrants and Substitutes	Value Proposition	Platforms and Complementors	Competitive Advantage
					

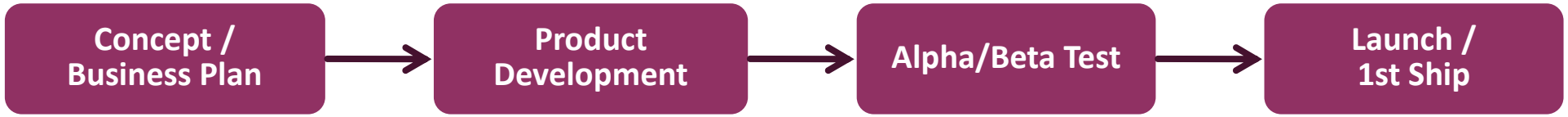
Strategy Canvas (http://www.blueoceanstrategy.com/concepts/bos-tools/strategy-canvas/)

EXERCISE: CLOUD SERVICE BUSINESS PLAN

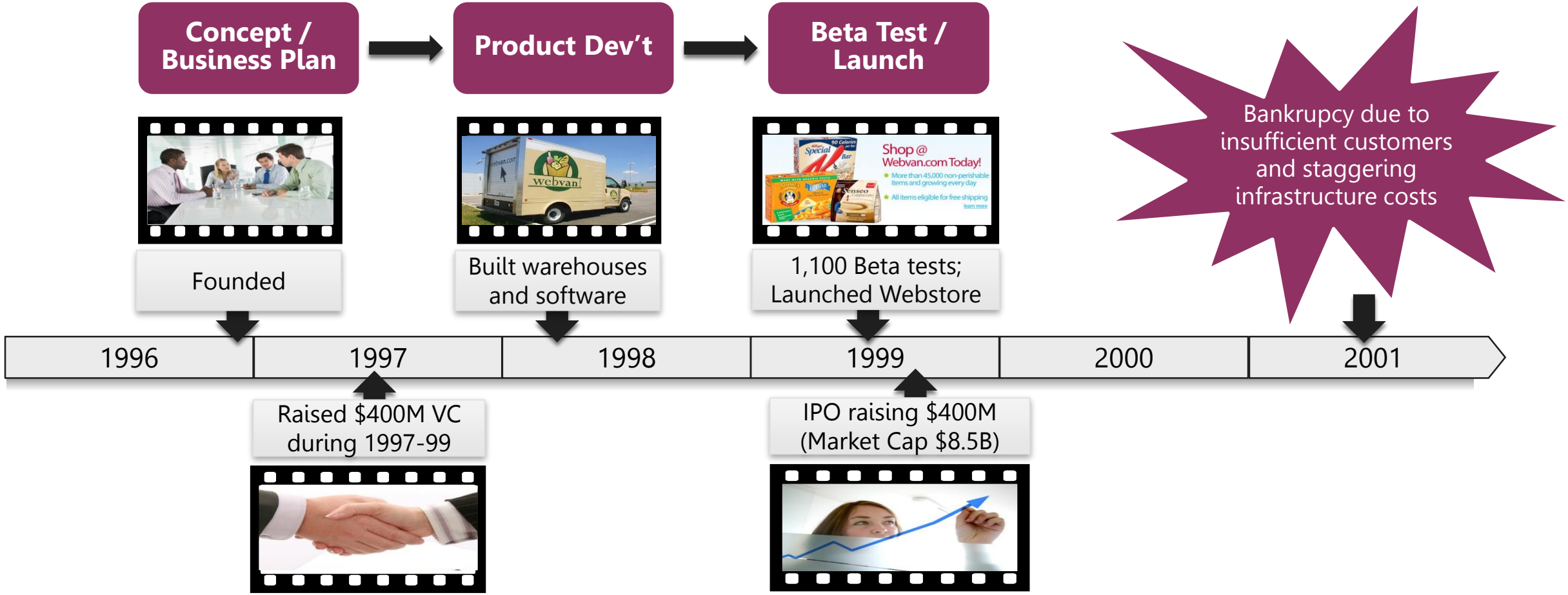
STRATEGY CANVAS

SAAS: PRODUCT DEVELOPMENT PROCESS

TRADITIONAL PRODUCT DEVELOPMENT PROCESS



- Engineering Driven
  - Product design → 1st Release Spec → Development → Alpha/Best test
- Marketing in parallel
  - Refine the target market → Customer interviews → Market Requirements Document (MRD) for Engineering → Build sales team and materials and hire a PR agency
- Focus on 1st Ship Date
  - Sales and marketing work backwards
- Appropriate when product requirements and target customers are relatively certain
  - When upgrading a successful product based on feedback from an existing customer base



CASE STUDY: LINEAR PRODUCT DEVELOPMENT PROCESS

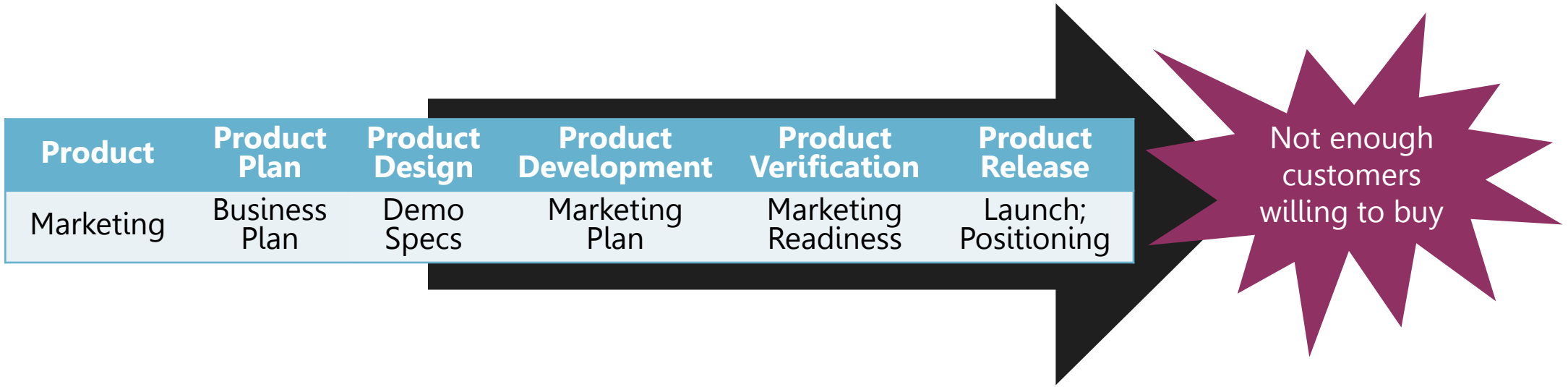
Webvan

PROBLEMS WITH TRADITIONAL PDP

- Focus on 1st ship date
  - The 1st ship date is only the date when Engineering think the product is finished.
  - Beta customers are often not representative of a scalable mainstream market where customers tend to be risk-averse and pragmatic purchasers.
- Emphasis on execution instead of learning and discovery
  - In PDP marketing and sales believe they are hired for what they know, not what they can learn, and they execute programs that have worked for them before.
  - Before we can sell a product, we need to answer some very basic questions through iterative learning and discovery (see the clipboard).

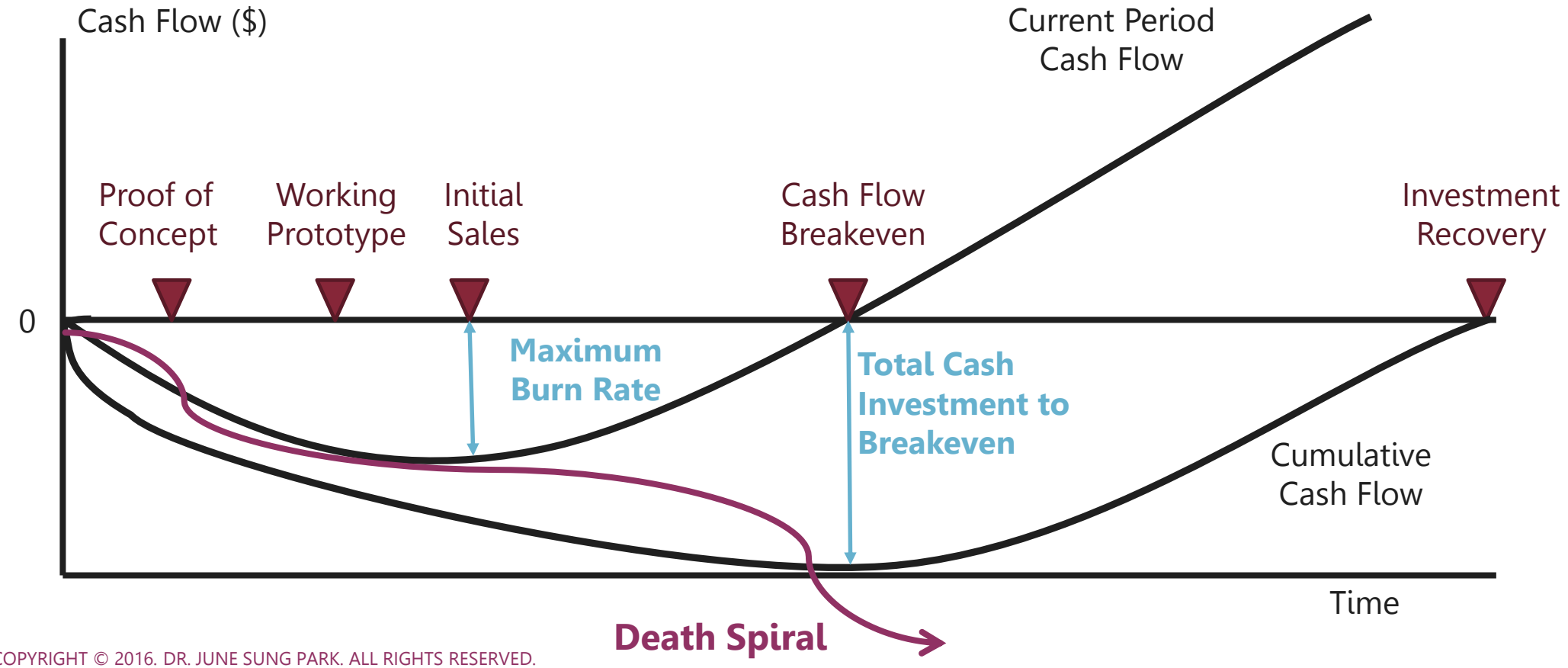
PROBLEMS WITH TRADITIONAL PDP

- Lack of meaningful milestones for sales, marketing and business development
  - In PDP you use a product development schedule to time your readiness to sell, and you won't know if the sales strategy and plan actually work until after 1st ship.
  - In PDP you perform costly marketing activities while you engineer the product before customers start buying (i.e., before sales has a chance to test the positioning or demand-creation activities in front of real customers).
  - In PDP, you build a fully staffed organization after 1st ship with the "get big fast" mantra. There are no milestones to stop or slow down hiring until you understand customers.



PROBLEMS WITH TRADITIONAL PDP

- Premature scaling leading to Death Spiral
  - Premature scaling causes the cash burn rate to accelerate.

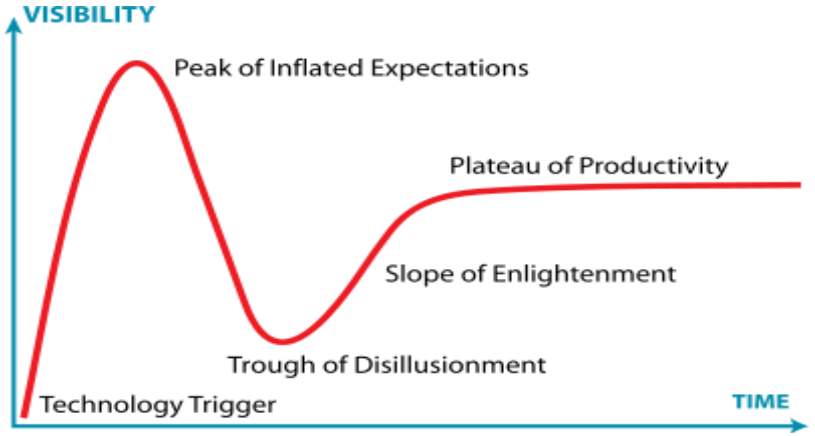


NEW APPROACH TO PRODUCT DEVELOPMENT

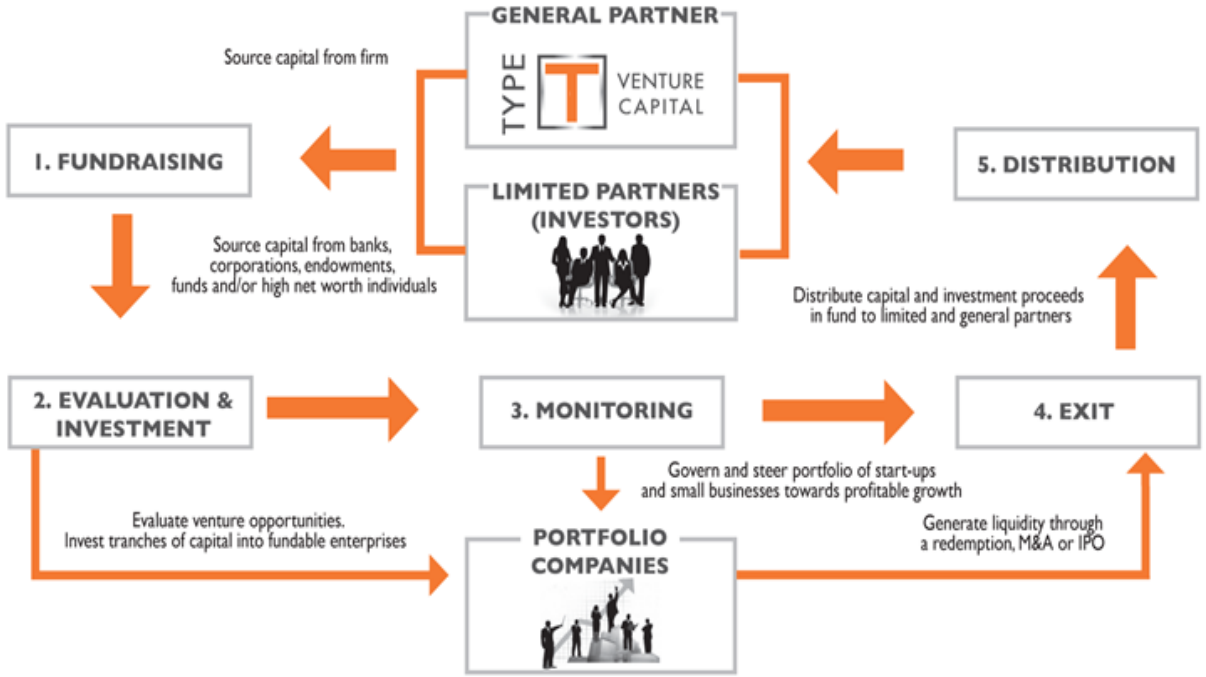
- Address uncertainty
  - Startups creating a new market face many unknown unknowns: unknown customers, features, competitors, critical resources (especially essential talents), patents, environmental factors, business models, partners, channels, regulations, …
  - There are hidden deal killers and big bets.
- Learn and discover
  - We need an iterative process of "learning and discovery" to overcome uncertainties.
  - In the early stage of a startup, focusing on "execution" will put you out of business; instead, you need a process to get to the point where you know what to execute.
- Customer driven
  - If you don't get early customers, you won't be lucky enough to deal with chasm crossing.
  - What you need is finding early customers who pay real dollars, and simultaneously preparing a repeatable sales process to slide into the mainstream.
- Balanced approach
  - We need a process with measurable milestones for finding customers, developing the market and validating the business model, which runs parallel with the product development process.

NEW APPROACH TO PRODUCT DEVELOPMENT

- Avoid risks associated with Venture Capital
  - During the period when new revolutionary technologies like the Internet raised the hype cycle to its peak level (e.g. Dot Com boom during 1997-1999), it was relatively easy for software startups to obtain venture capital, take the company public, or sell it to an established firm to cash out.
  - However, the principles that determine why businesses succeed or fail over the long run remained in place; e.g. Dot Com bubble burst in 2000 and during 2001-2003 most of Dot Com startups went bankrupt.
  - During the boom periods, venture capitalists may put cash in and pull it back out as quickly as possible to take advantage of the boom.
  - Software entrepreneurs, though, need to survive for the long haul, both good times and bad.

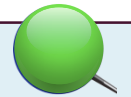


Technology Hype Cycle (Gartner 1995)



NEW APPROACH TO PRODUCT DEVELOPMENT

- Avoid Risks associated with Venture Capital
  - More venture funding than you need in the short term, or even cash from premature IPO, often becomes the kiss of death*—startups spending the money to hire too many people, pay too high salaries to executives, invest too much in infrastructure and R&D projects so as to raise the overhead to a level that prevents them from making a profit from their revenues.
  - It is best if a software startup can bootstrap its growth—growing the firm incrementally from its own resources and revenues; otherwise, it should get venture funding incrementally in amounts just enough to go to the next milestone.



Facts about Venture Capital**

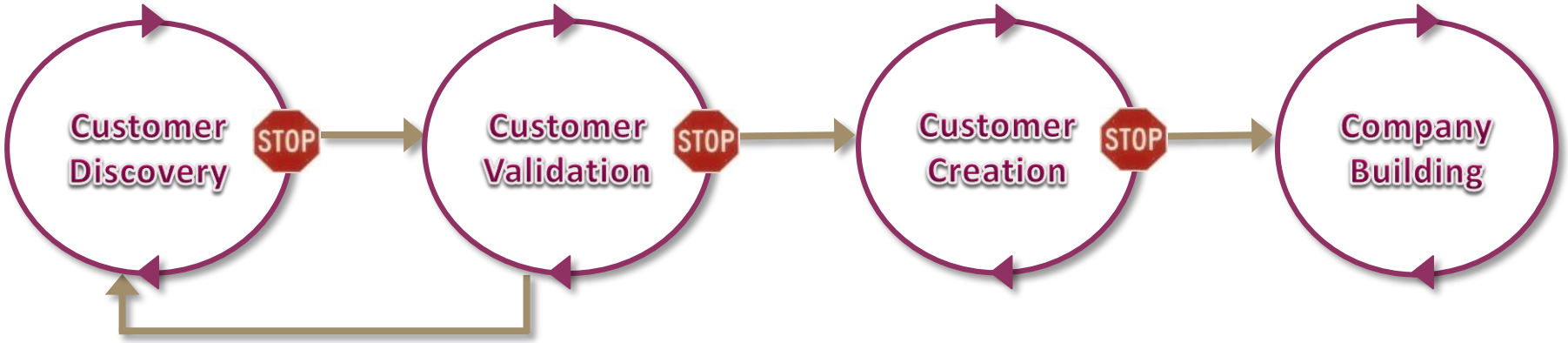
- VCs finance 6 of 1,000 business plans each year.
- 10-20% of funded startups go public.
- In normal times (except bubble periods) startups take 5 years to IPO.
- 60% of funded high-tech startups go bankrupt, and another 30% get merged or liquidated.
- VCs own 60% of equity in software startups by the time of IPO.
- Founder-CEOs own 4% after IPO.

* Michael A. Cusumano, The Business of Software, Free Press, 2004.

** John Nesheim, High Tech Startup, Free Press, 2000.

CUSTOMER DEVELOPMENT PROCESS

- Finding the right customers and market is unpredictable, and you can screw it up several times before you get it right.
- No non-engineering organizations (sales, marketing, business dev't) or infrastructure investments until you have validated your business model by finding paying customers.

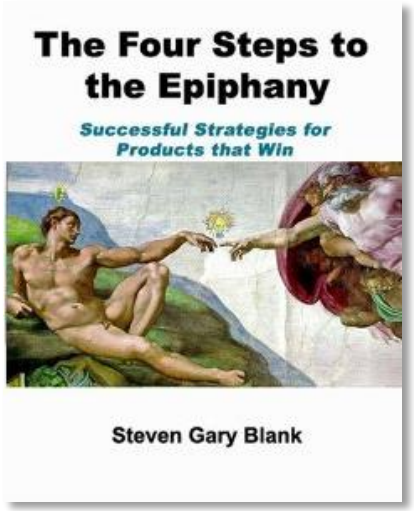


- Understand customer problems and needs.
- Develop a visionary product with minimum features

- Find paying early adopters.
- Develop proven marketing process.

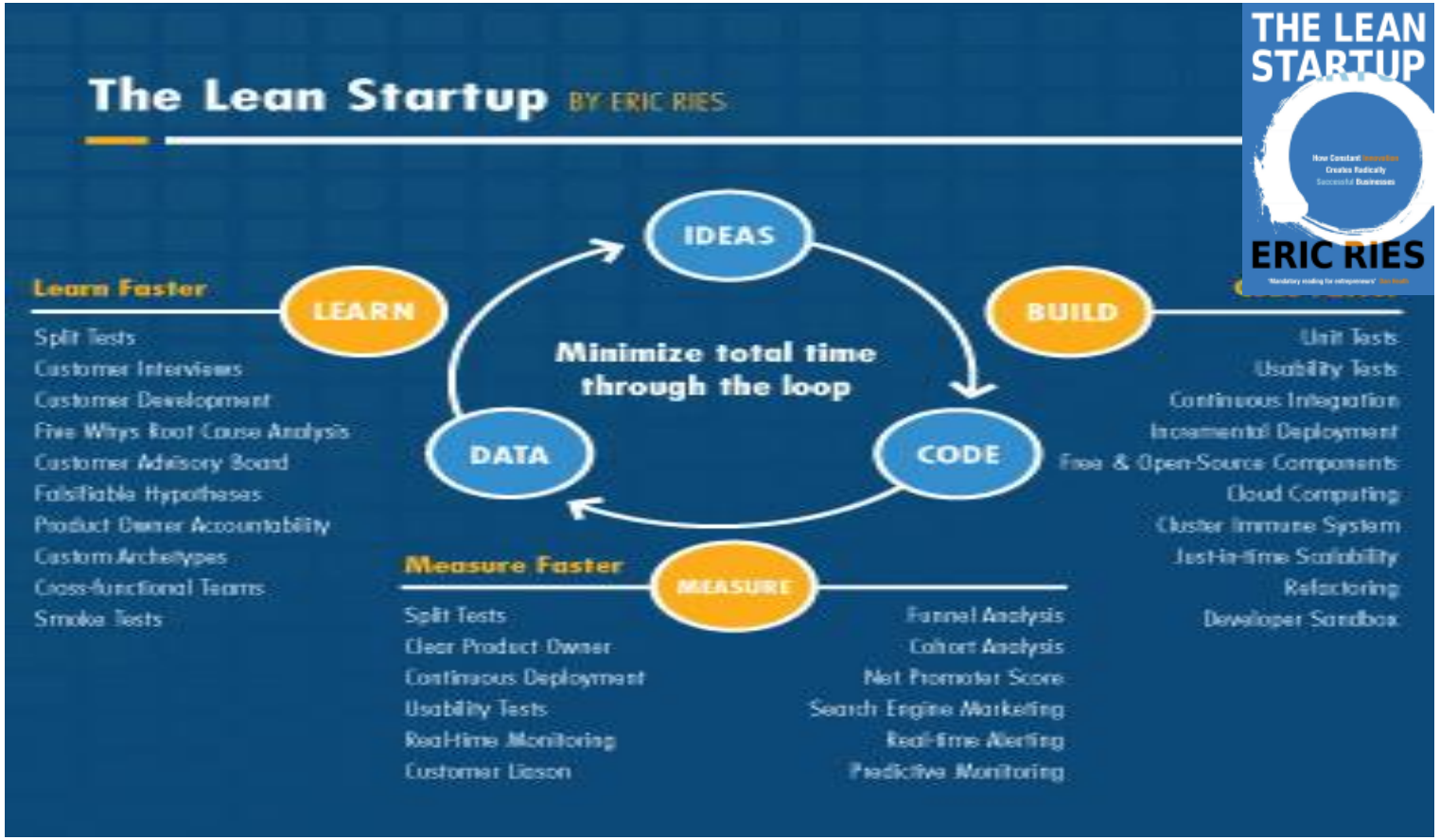
- Develop a whole product solution and create mainstream customer demand.

- Make transition from an organization designed for learning and discovery to one that is engineered for execution



LEAN STARTUP PROCESS

- Lean startup is a method for developing businesses and products first proposed in 2011 by Eric Ries.
- It favors experimentation over elaborate planning, customer feedback over intuition, and iterative design over traditional "big design up front" development.



Eric Ries, The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses, 2011.
Steve Blank, "Why the Lean Start-Up Changes Everything," Harvard Business Review, May 2013.

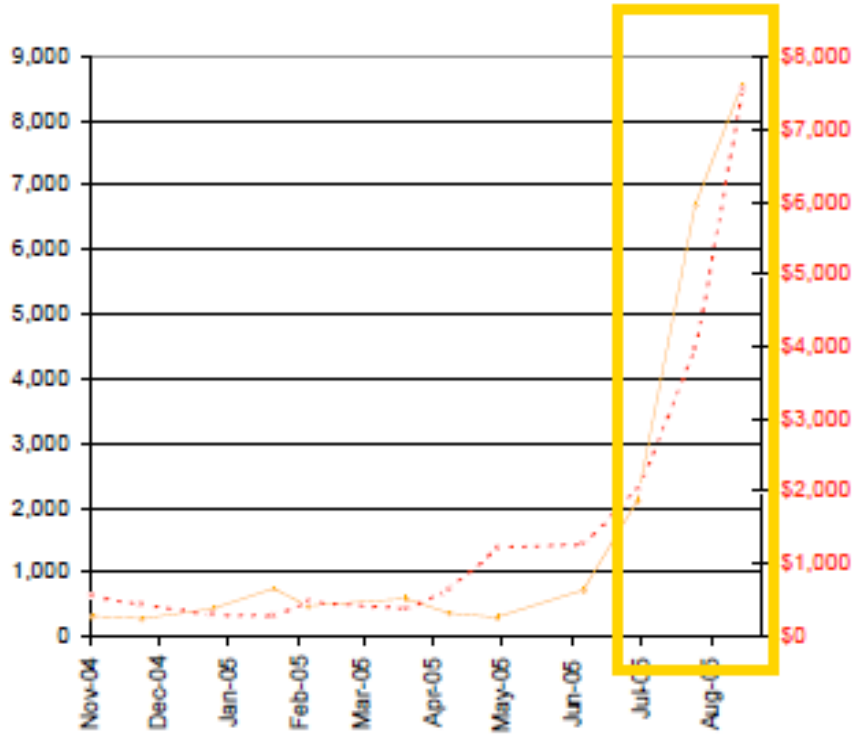
- Founded in April 2004
- Followed customer development process
- Designed to test hypothesis and answer unknowns
- Minimum feature sets, maximum customer coverage
- Leveraged IT commoditization
- Used extreme programming approach and agile management practices
- Shipped in 6 months
- Charged from Day 1
- No press release
- 2007 revenue of $10M
- Ship 20 times a day
- Now has the world's largest virtual goods catalog of 100M+ items created by 50M+ members

IMVU (Instant Messaging Virtual Universe)–a social network and entertainment site where members use 3D avatars to meet, talk, play, create, buy and sell

CASE STUDY: CUSTOMER DEVELOPMENT PROCESS

IMVU

- 2004 Q4
  - Product: 3D IM add-on for hanging out online with friends; Piggy back on existing buddy lists and IM programs.
  - Customer: Avatar customization is the key appeal; "Add-on" concept is confusing; Want a separate buddy list.
- 2005 Q1-Q2
  - Product: Ditched the IM add-on idea; 3D IM service for hanging out with friends and meeting new people
  - Customer: Not enough people on IMVU.
  - Marketing: Scaled up advertising budget; Learned about retention from market leaders.
- 2005 Q3
  - Product: 3D IM service plus avatar home pages
  - Customer: Messages in home pages and real-time interaction complement each other; Want more than two avatars per window: parties and chat rooms



CASE STUDY: CUSTOMER DEVELOPMENT PROCESS

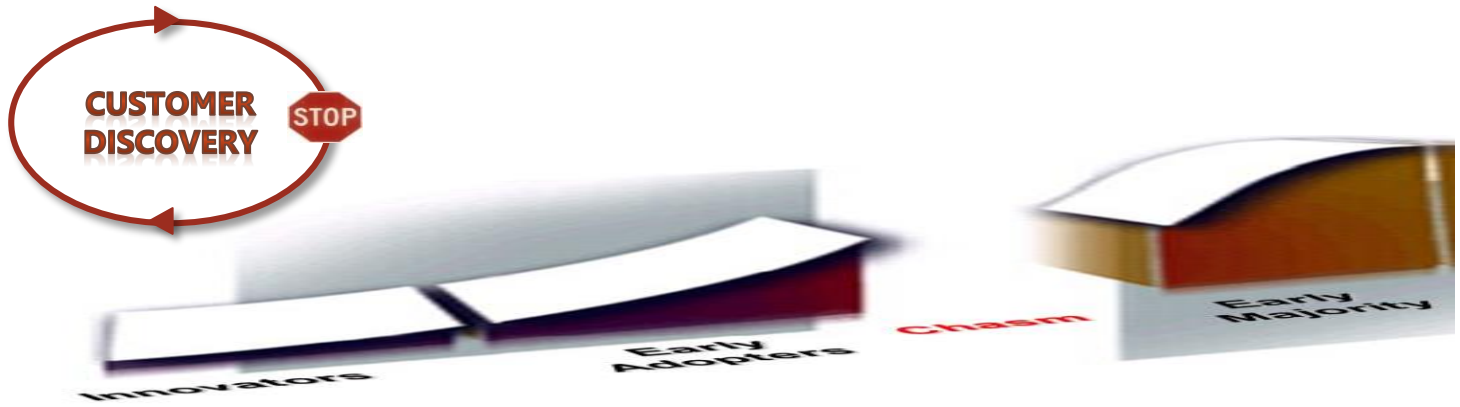
IMVU

ITERATIVE PRODUCT DEVELOPMENT PROCESS

- Step 1: Formulate a Working Hypothesis
  - Make sure your experience and expertise give yourself the right to an opinion on the specific opportunity.
  - Define opportunity, the resources required to pursue it, value proposition for customers and a business plan—all based on uncertain assumptions.
- Step 2: Assemble Resources and Start Development
  - Assemble tangible and intangible resources – IP, competent employees, access to partners – necessary to conduct the iterative experiment.
  - Start development with the feature list driven by the vision and experience of the founders.
  - Raise enough money to fund the next round of experiments.
  - Outsource functions that distract you from critical experiments.

ITERATIVE PRODUCT DEVELOPMENT PROCESS

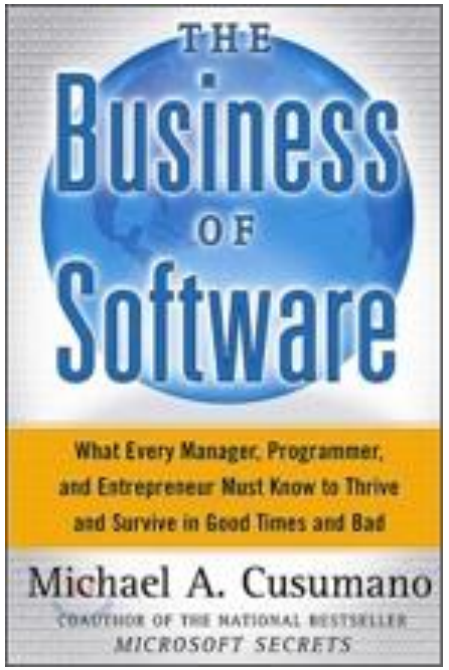
- Step 3: Find visionary customers for early sales and adapt your product to their requirements
  - Search customers who will buy the product as you have defined.
  - If no customers can be found for the product as specified, you incorporate the features that customers request, or you change target customers.
  - Identify potential deal killers - variables likely to prove fatal to the venture – and big bets – key drivers of success. Focus subsequent experiments on big bets.
  - Design the product with a "good enough" set of features for the small group of visionary customers who will buy your "unfinished and untested" product because they believe your product solves their painful problem.



ITERATIVE PRODUCT DEVELOPMENT PROCESS

- Step 4: Build profitable and repeatable sales process
  - Sell visionary customers an unfinished product without a professional sales organization.
  - Use the customer development team and a “sales closer”, not a VP of sales, to develop customers. Get enough orders to prove that your product solves customer needs.
  - If you don’t get enough early customers who would buy your product at the price you need, change target customers.
  - Develop a tested, proven and repeatable marketing and sales process (which is different from that of large companies that is driven by revenue and head count).
  - After learning enough to scale the business, develop product and company positioning, distribution channels and service partners, and get feedback and endorsement from industry pundits and analysts.

- Product
  - Andrew Greenawalt, an experienced network designer and consultant, founded Cybergnostic in 1997 to provide wide area network design, outsourcing and support services to small and medium companies (for example, to provide high-speed Internet access via T1) around Connecticut area.
- Sales
  - In the beginning of 2000, the company had 18 employees, but only 30 customers, expecting revenues of $2M for the year.
  - Moreover, 80% of that revenue was from two big customers. Now the question was whether this is a business with real growth prospects.
- What went wrong?
  - The demand for Internet-based networking services and outsourcing did not increase as fast as expected and established telecommunication service providers became more aggressive in going after even SMEs.
  - In May 2000 Brad Miller, a seasoned business executive, joined as the new CEO.



CASE STUDY: REPEATABLE SALES PATH

Cybergnostic

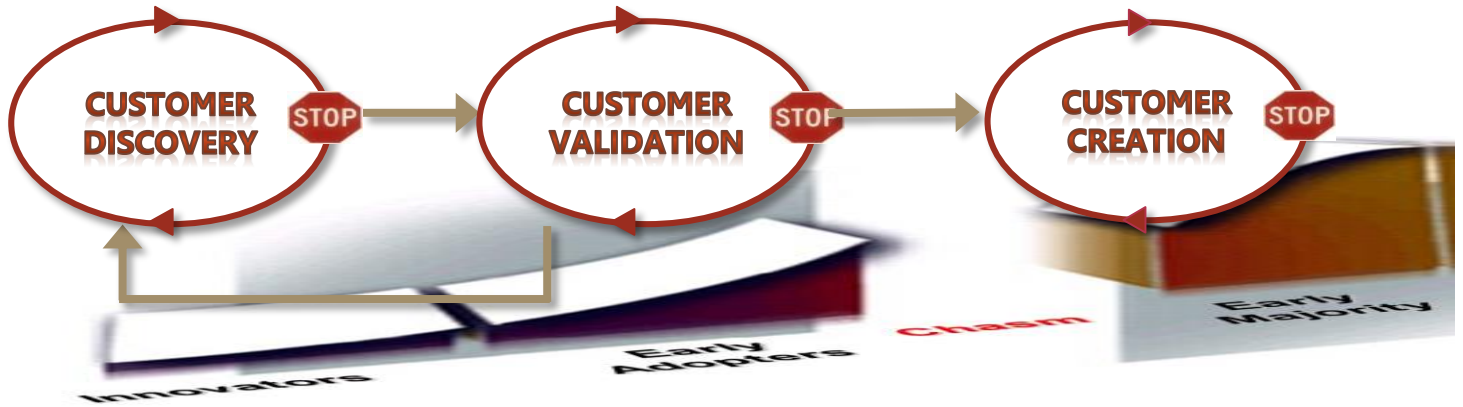
- New Sales Strategy
  - Miller examined how Greenawalt had gotten his customers.
  - As for the two big customers, it was an accounting package vendor who recommended Greenawalt as a network consultant.
  - This suggested a new sales strategy: Partner with ISVs to get customers who want to buy new software but need a better network infrastructure and don't have the resources to go to high-priced telecommunication service providers.
  - Other smaller customers included a local community bank, a lumberyard and a car dealer.
  - From this observation Miller concluded that those companies represented vertical markets with similar networking needs, and that Cybergnostic should specialize its services for those verticals rather than trying to be a generalist for SMEs.
- Build Once and Sell Many Times
  - In 2002, Cybergnostic had more than 40 lumberyards as its customers from all around the U.S. and all through the same ISV.
  - Miller estimated there are another 3,000 lumberyards in the U.S. that are potential customers.
  - The most successful vertical, though, was community banks with the needs of secure networking services. Banks' accounted for 40% of revenues compared to 20% for lumberyards. There were yet some 10,000 community banks more in the U.S.

CASE STUDY: REPEATABLE SALES PATH

Cybergnostic

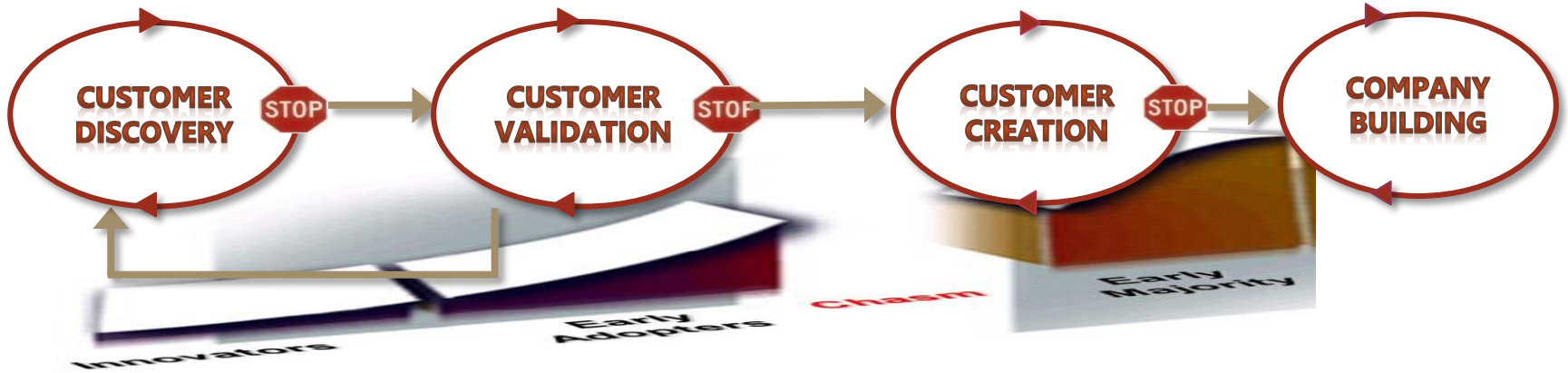
ITERATIVE PRODUCT DEVELOPMENT PROCESS

- Step 5: Ramp up standard marketing communications
  - Commit to year one sales number.
  - Hire PR agency for company and product. Have the agency conduct external as well as internal "positioning audits".
  - Select the audience, messengers, messages and media, communicate to the audience about your company and product, and measure success.



ITERATIVE PRODUCT DEVELOPMENT PROCESS

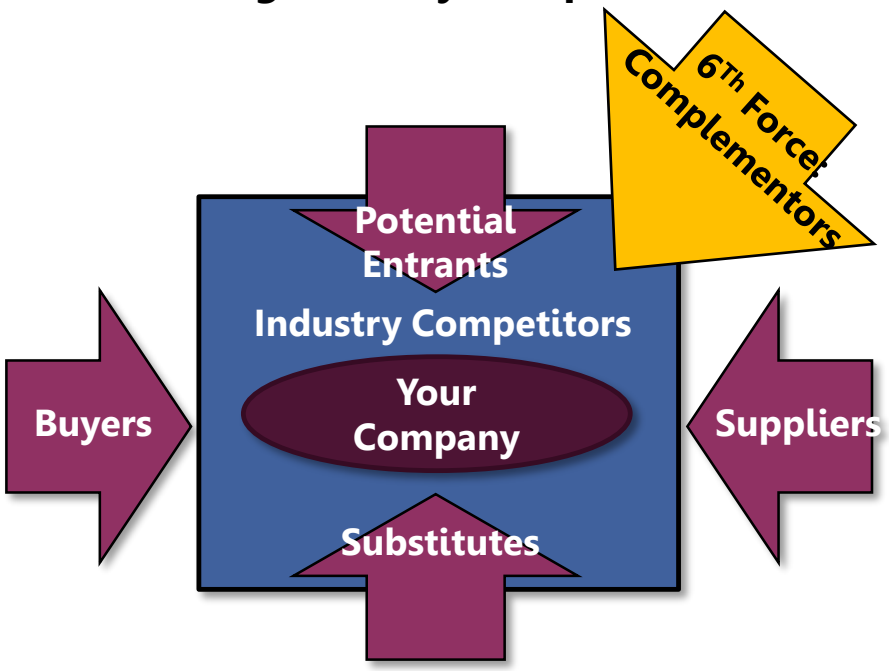
- Step 6: Transition from development-centric to mission-centric, then to process-centric organization
  - Scale up and cross the chasm with an agile company, one that can still respond with entrepreneurial speed, but do so with a much larger group of people.
  - Evolve from the learning and discovery stage to “fast-response functional departments”.
  - Add a layer of management that is still focused on the customer-centric mission.
  - Build repeatable and scalable processes to grow into a large company.



SOFTWARE PRODUCT SUCCESS FACTORS

- Attractive Market
  - Customers willing to pay for early incomplete versions
  - Mainstream market large enough for the whole product solution*, and preferably having network externalities** and bandwagon effects
  - Horizontal product with vertical foothold***
  - High entry barriers
  - Limited power of buyers or suppliers to force price cut or cost pressure
  - No good substitutes for basic products
  - A standard-setting platform with many complements, or a complement to a market-leading platform, generating the effect of positive feedback***

Michael Porter's Five Forces Model Driving Industry Competition**



* Geoffrey A. Moore, Crossing the Chasm, HarperCollins, 1991.
** Carl Shapiro and Hal R. Varian, Information Rules, Harvard Business School Press, 1999.
*** Michael A. Cusumano, The Business of Software, Free Press, 2004.
**** Michael Porter, Competitive Strategy, Free Press, 1980.

SOFTWARE PRODUCT SUCCESS FACTORS

- Strong Team
  - Visionary founder leading product and customer development, who later stays as CTO even after IPO
  - Disciplined and creative software engineers who can adapt the product to changing needs from one domain to another, and from early adopters to mainstream customers
  - Experienced CEO to carry the venture beyond the chasm
  - CFO who can voice reasons for suppressing too much R&D, infrastructure investments, sales and marketing expenditures, and venture funding
- Iterative and Adaptive Product Development and Business Planning Process
  - Process to overcome Catch-22: lining up paying customers who ask for customer references
  - Repeatable marketing and sales process
  - Plan to generate revenues and profits within 1-2 years and secure funding
  - Roadmap from a niche player with customized services to a standard setter with full-fledged packages

- Continued disrupted innovations and business success after Steve Jobs' return to Apple in
  - OS X (1999) → iPod (2001) → iOS / iPhone / App Store (2007) → iPad (2010)
- Product Design
  - Focus on what people need and how they use the product
  - Decide what not to contain; Concentrate on the things really important to customers
  - Design simple and easy-to-adopt product
  - Design continues until they find the key underlying principle of the problem to solve
  - Painstaking attention to the smallest of details
- CEO as Product Manager
  - Total hands-on involvement in decision making from vision, strategy to product and service design to packaging

Thomke, S. and B. Feinberg, Design Thinking and Innovation at Apple, Harvard Business School, March 2010.

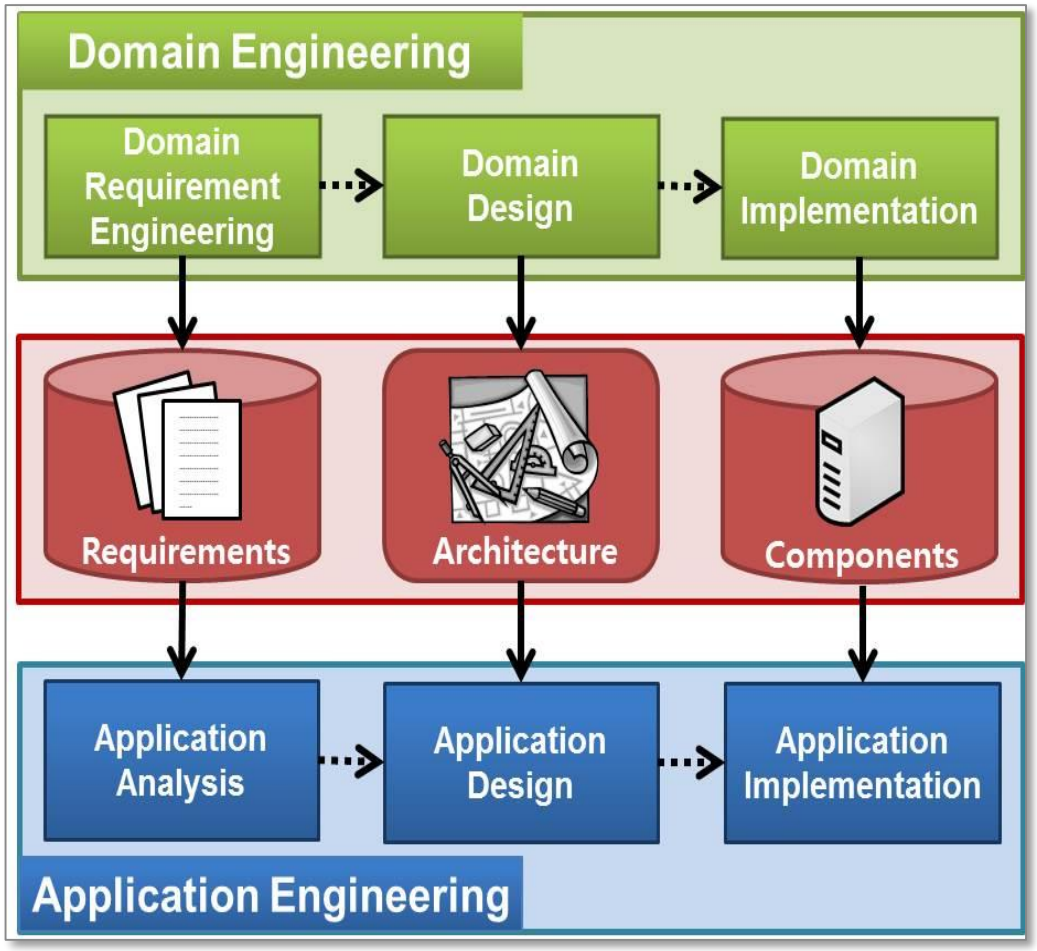
CASE STUDY: PRODUCT DEVELOPMENT

Apple

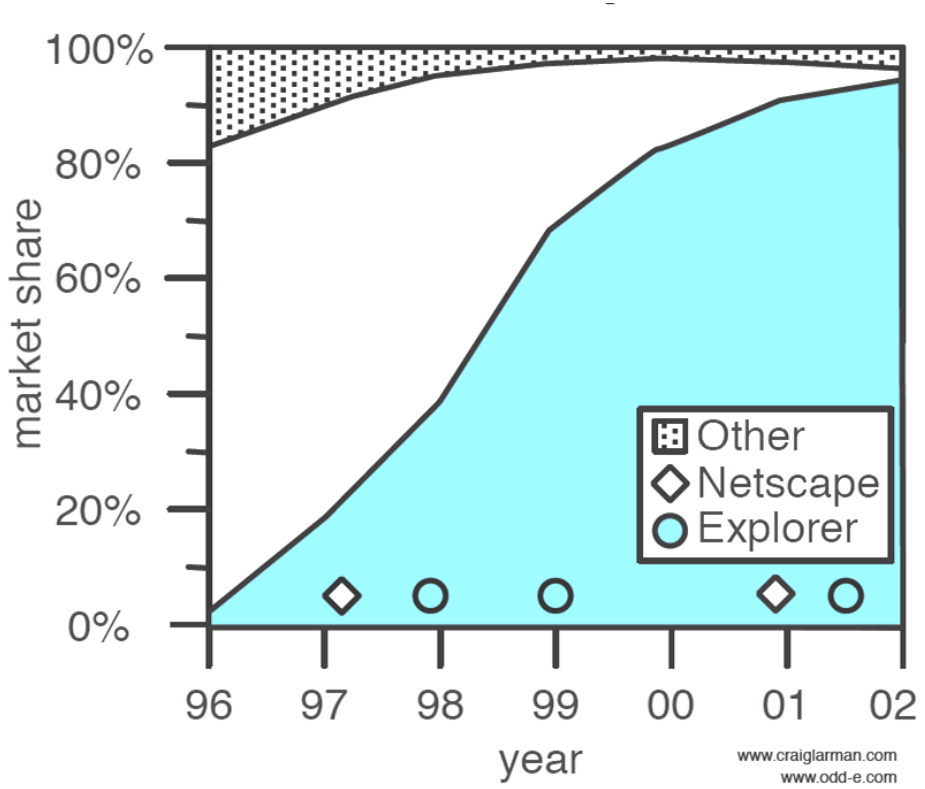
CASE STUDY: PRODUCT DEVELOPMENT

Apple

- Product Engineering Process
  - Iterative Customer Involvement
    - Participatory design: Integrating customer's experience into its design and development processes
    - Usability tests
  - Product Line Engineering
    - Streamlined product portfolio and extensive reuse within product families (e.g., OS X)
    - Design the initial product as a platform with an architecture that will accommodate the development and production of the derivative products envisioned



- In 1995 many analysts thought Microsoft would be another incumbent that stumble when faced with a disruptive innovation in its core business.
- On May 26, 1995, Bill Gates sent the "Internet Tidal Wave" memorandum to Microsoft executives in which he described Netscape as a "new competitor 'born' on the Internet."
- Internet Explorer 3.0 (IE3) was Microsoft's first browser released in August 1996 that many considered the equal of Netscape's offering.
- "Microsoft is aiming to build its market share for Internet Explorer to as much as 40 percent," Bill Gates told Wall Street analysts in August 1996.

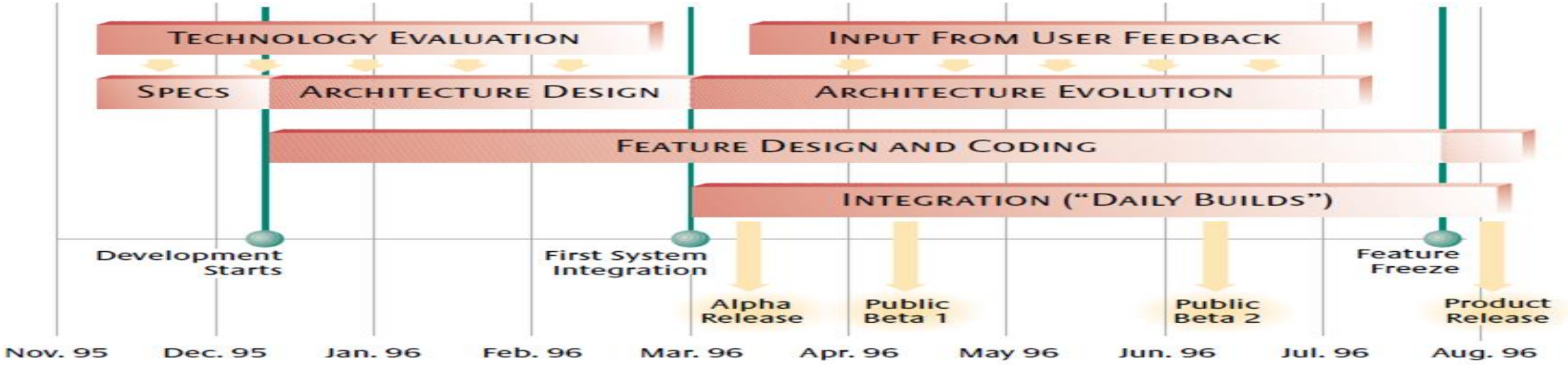


A. MacCormack, Product-Development Practices That Work: How Internet Companies Build Software, MIT Sloan Management Review, Vol. 42, No. 2, Winter 2001.

CASE STUDY: PRODUCT DEVELOPMENT

Microsoft

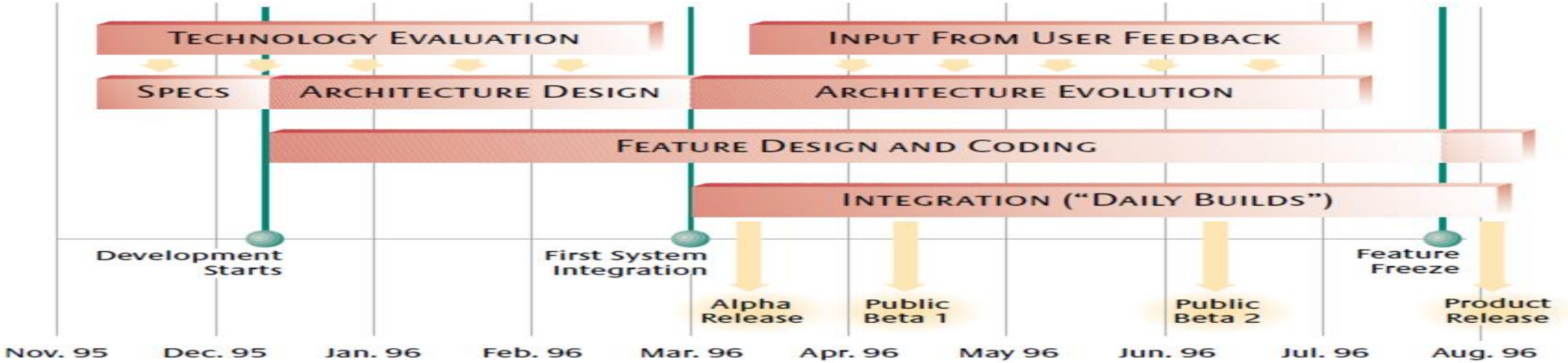
- The IE3 project started on Nov. 1, 1995 with the white paper "How We Get 30% Market Share in One Year."
- A small team started putting together the initial spec, which were released to Microsoft's development partners on Dec. 7.
- The project was designated a "companywide emergency"—if you were smart and had time, you should help out the IE3 team.
- It was critical first to develop a product architecture and componentize the product, since a large number of people inside and outside the company had to work in parallel.



CASE STUDY: PRODUCT DEVELOPMENT

Microsoft

- From that point on, a process of daily builds was instituted using automated tests. This allowed the team to add new functionality to the product, test the impact of each feature, and make suitable design changes.
- In April 1996 the first beta version was distributed to the public, which included about 50~70% of the final functionality. The second beta followed in June with 70~90%.
- The team used the alpha and beta versions to gather feedback on bugs and on possible new features. A significant proportion of the design changes made after the first beta release resulted from direct customer feedback.

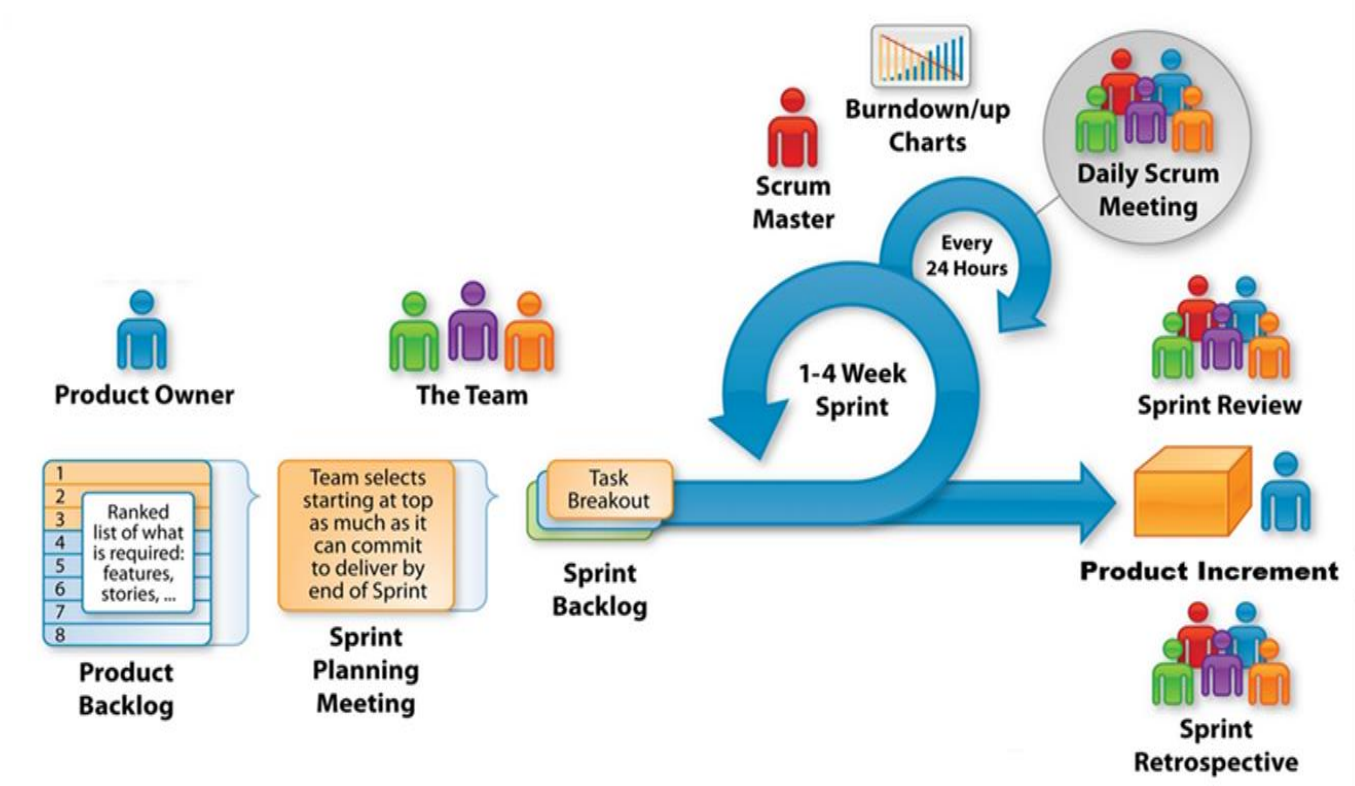


CASE STUDY: PRODUCT DEVELOPMENT

Microsoft

Today Microsoft applies agile software development process consisting of the following practices:

- Basic Scrum
  - 4-week or 2-week sprint with daily scrum
  - JIT design of features using CRC
  - Spike for large or unknown features prior to including in the sprint backlog
- Planning Poker
  - Planning Poker (a.k.a. Wideband Delphi) played in the sprint planning by an extended development team to estimate person-hours
  - Planning Poker sometimes leads to a deadlock when the product owner did not fully described the feature to be delivered.



L. Williams, G. Brown, A. Meltzer and N. Nagappan, "Scrum + Engineering Practices: Experiences of Three Microsoft Teams," *International Symposium on Empirical Software Engineering and Measurement*, Banff, Canada, 2011.

CASE STUDY: PRODUCT DEVELOPMENT

Microsoft

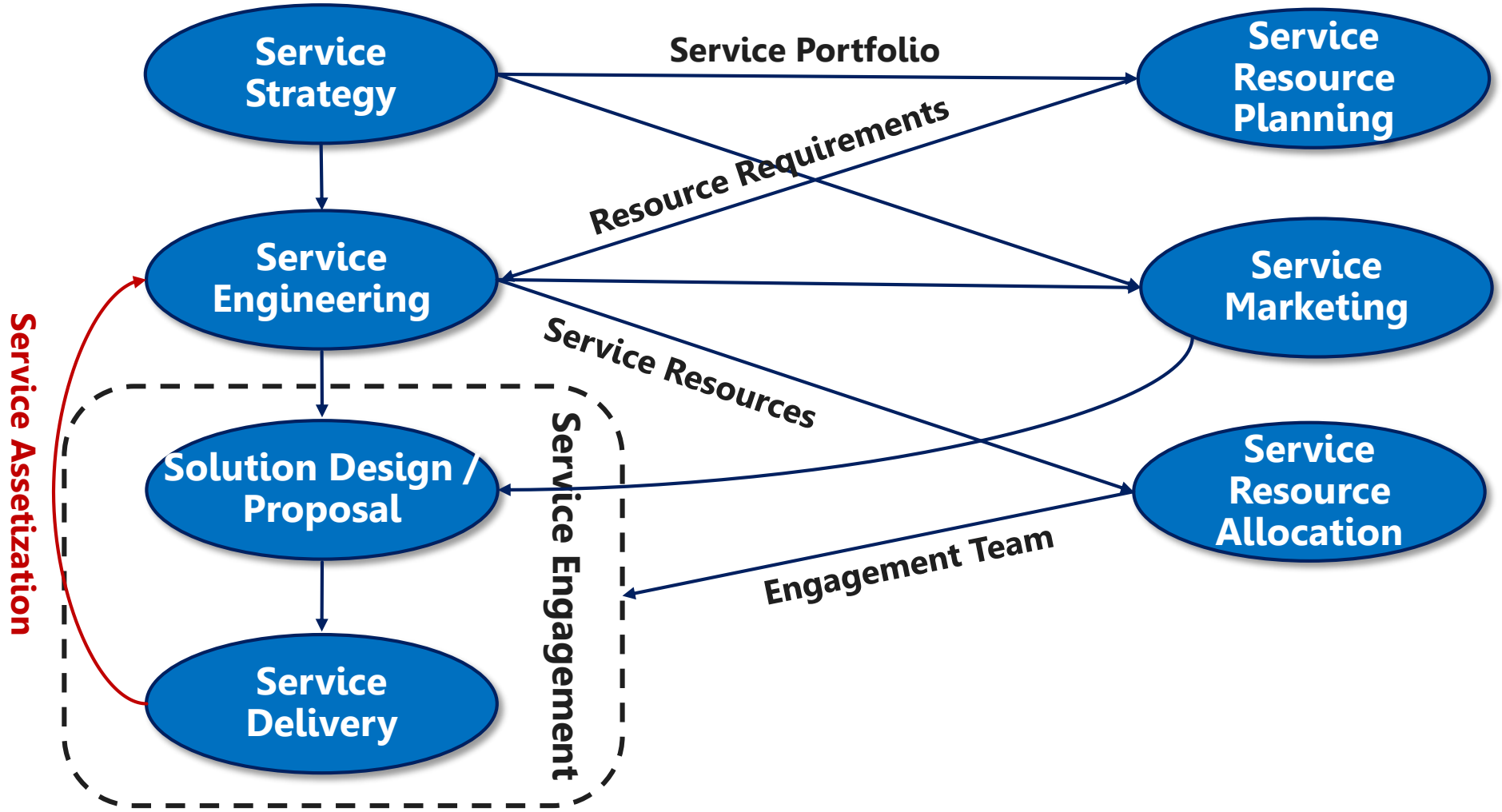
- Requirement Analysis, Architecture Design and Prototyping
  - In such cases, upfront work is requested to the product owner that may include fully defining small, user-visible, user-valued feature requirements, high-level architectural analysis, preliminary user interface design, and a spike.
- XP: Test-Driven Development
  - All public methods must have documentation.
  - Each developer check-in at least daily.
  - Each check-in initiates an automated build.
  - Each build entails automated unit tests and associated test coverage computation.
  - Unit test coverage must be at least 80%. Due to "Done or not done" criteria of scrum, developers often develop and demo only the happy path of a user story in the scrum review. High coverage is needed to force tests to execute alternative flows and error handling.
  - Build must complete with no errors or warnings on the highest level.
- QA
  - Senior developers conduct peer reviews of architecture diagrams and of code when adding new features. When code is checked in, the reviewer(s) names are entered into the code review tool.
  - All code must not have any static analysis errors or warnings.

CASE STUDY: PRODUCT DEVELOPMENT

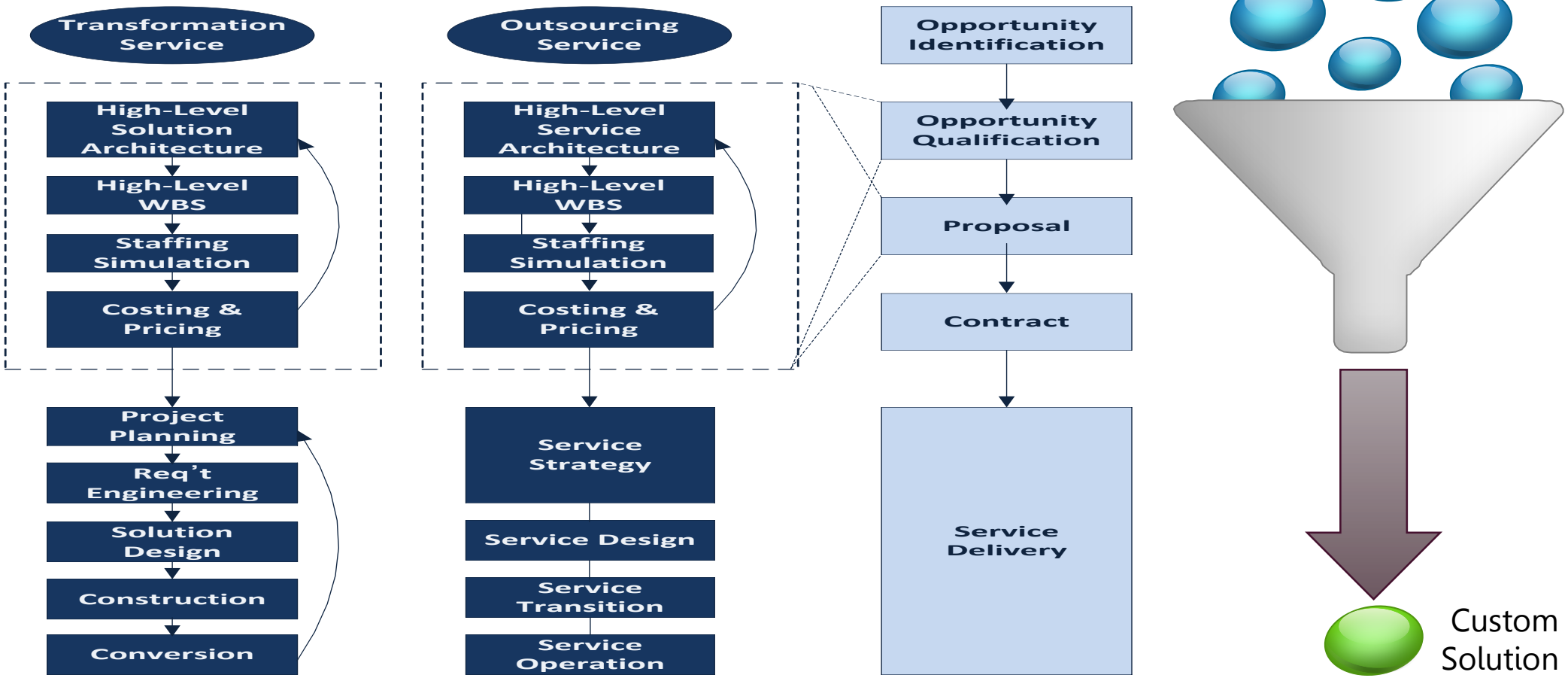
Microsoft

CSB: SERVICE DEVELOPMENT PROCESS

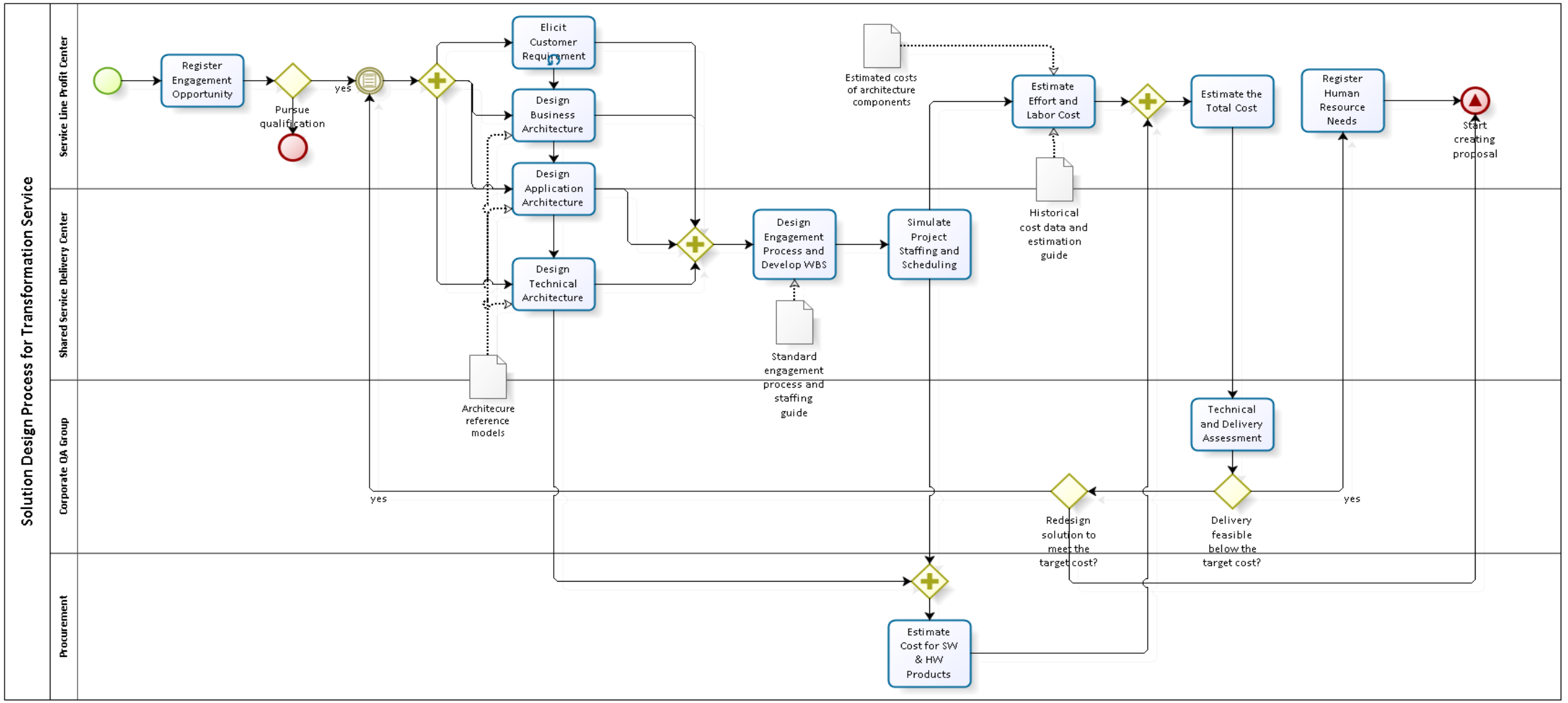
IT SERVICE BUSINESS PROCESS



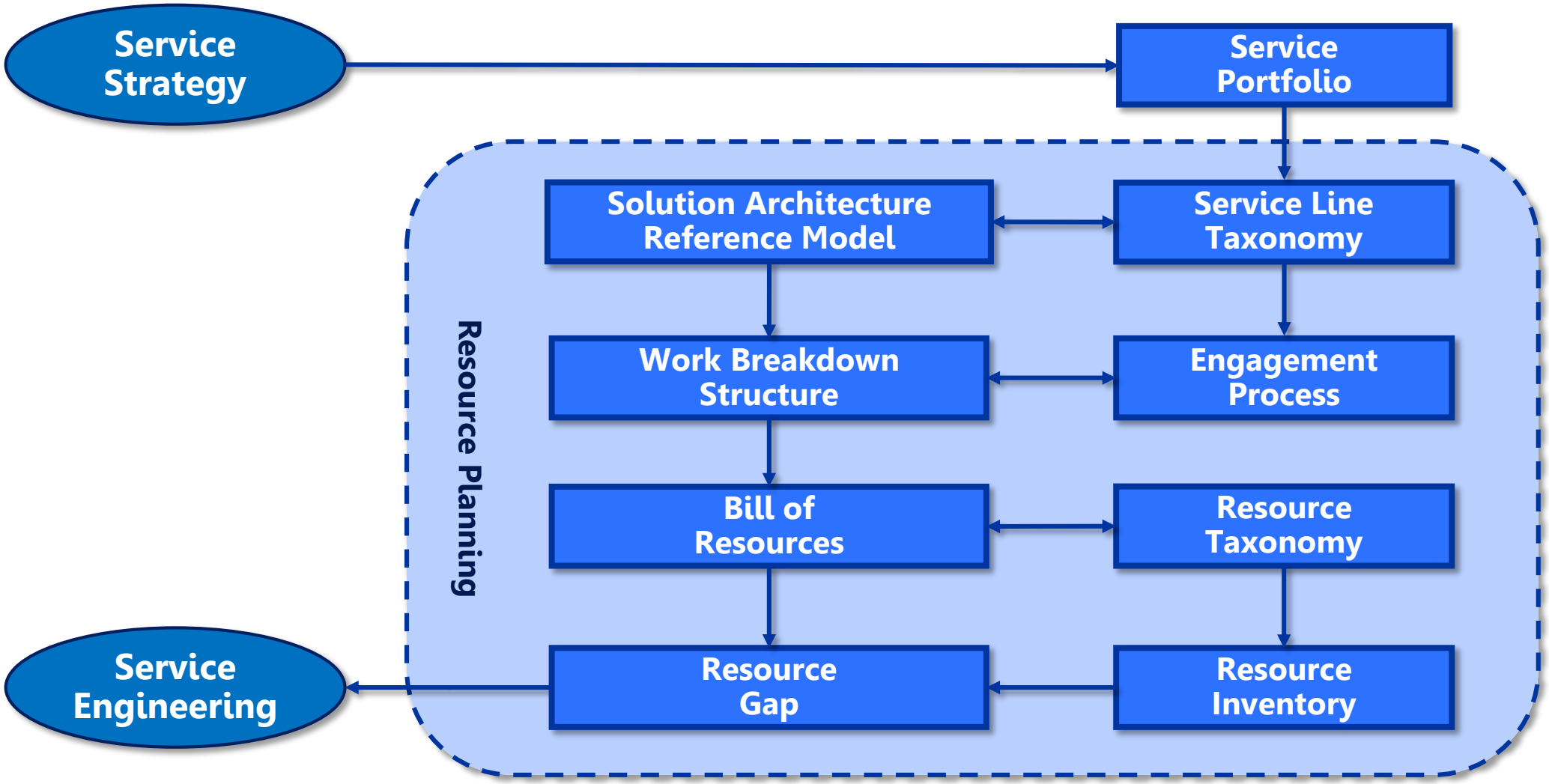
IT SERVICE ENGAGEMENT PROCESS



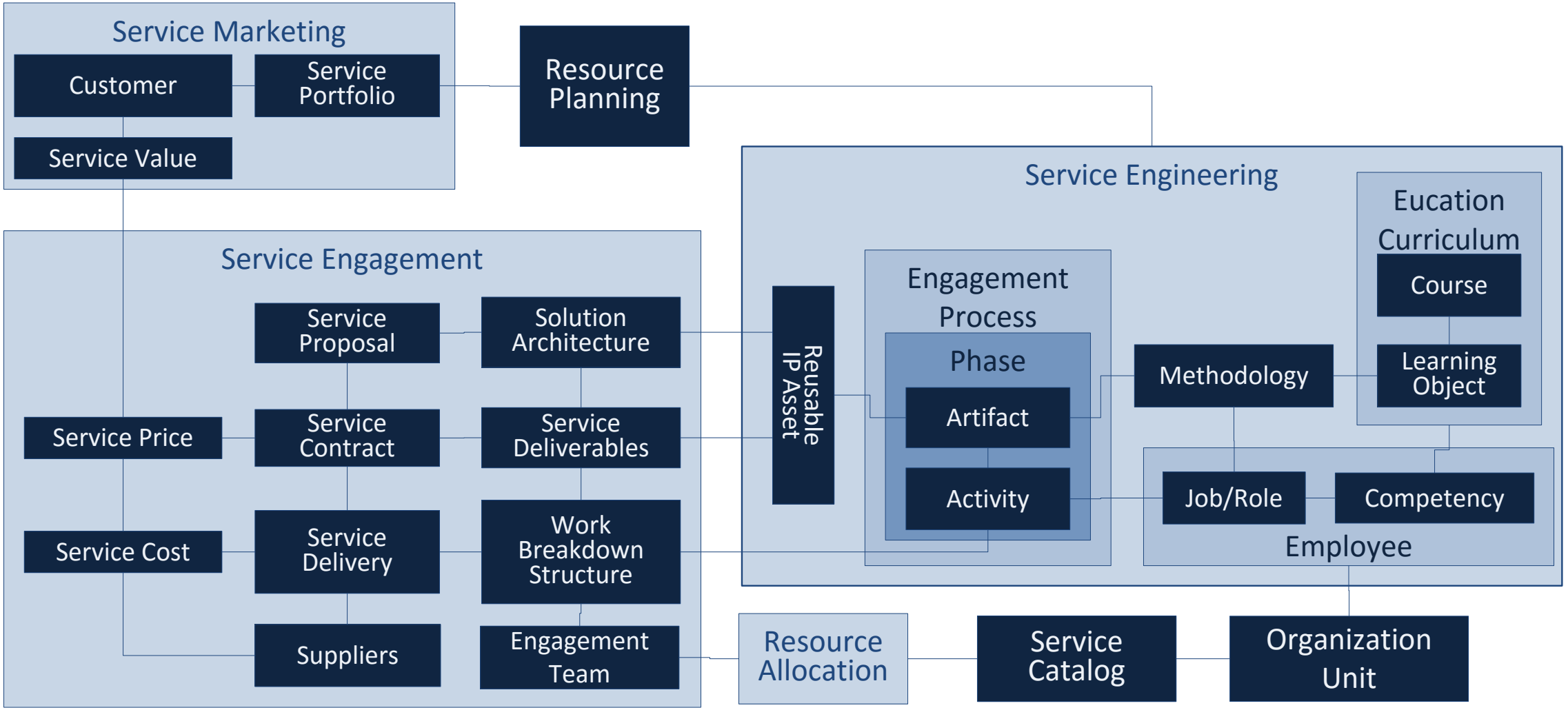
SOLUTION DESIGN / PROPOSAL PROCESS

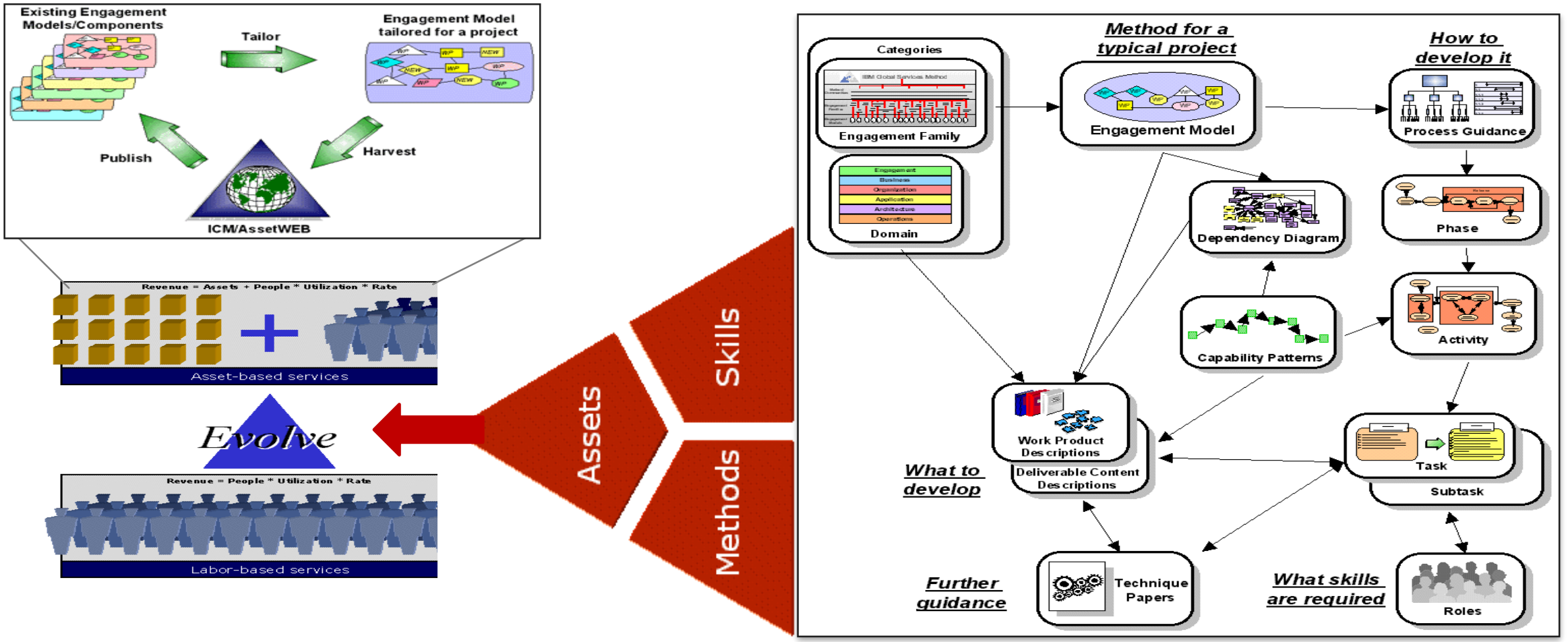


IT SERVICE RESOURCE PLANNING



IT SERVICE ENGINEERING



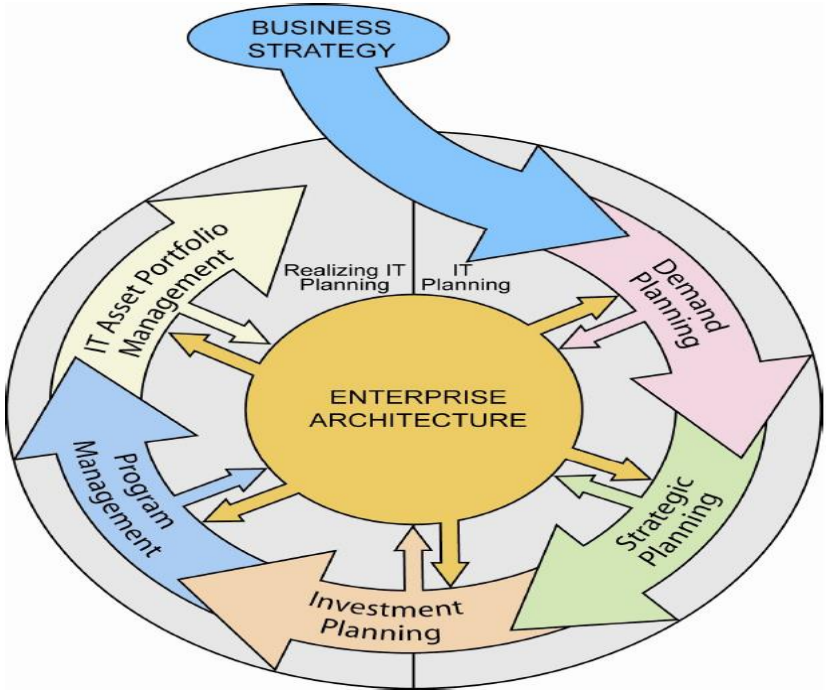


CASE STUDY: IT SERVICE ENGINEERING

IBM Global Services

CLOUD SERVICE BROKERAGE PROCESS

1. Create the cloud strategy.
2. Develop the cloud adoption roadmap.
3. Develop the business case for a cloud project.
4. Analyze requirements and design architecture.
5. Implement the cloud.
6. Manage the cloud service.



CLOUD ADOPTION STRATEGY

- Having a cloud adoption strategy and following the correct pathway to adoption are essential to success.
- Now is an early adoption phase of the cloud technology adoption lifecycle and most companies are prone to request outside assistance by cloud service brokers or cloud service vendors.
- With a strategy that prioritizes workload types for consideration and maps them to the optimal delivery model, cloud computing presents a tremendous opportunity for IT organizations to increase business value and ROI.
- Successful implementation requires an overall strategic vision combined with a pragmatic, evolutionary approach to deployment.

Environment Scan	Scan cloud technologies and services that may have value propositions and use cases for your customer.
Strategic Deep Dive	Narrow down to focus areas of cloud service that seem to have clear benefits to your customer.
Cloud Strategy Plan	Set strategic visions, goals, policies and principles for cloud adoption.

1. **Use Case Identification**

1.1. Use Case Name

State a concise, results-oriented name for the use case.

1.2. Agency

Record the agency sponsoring this use case.

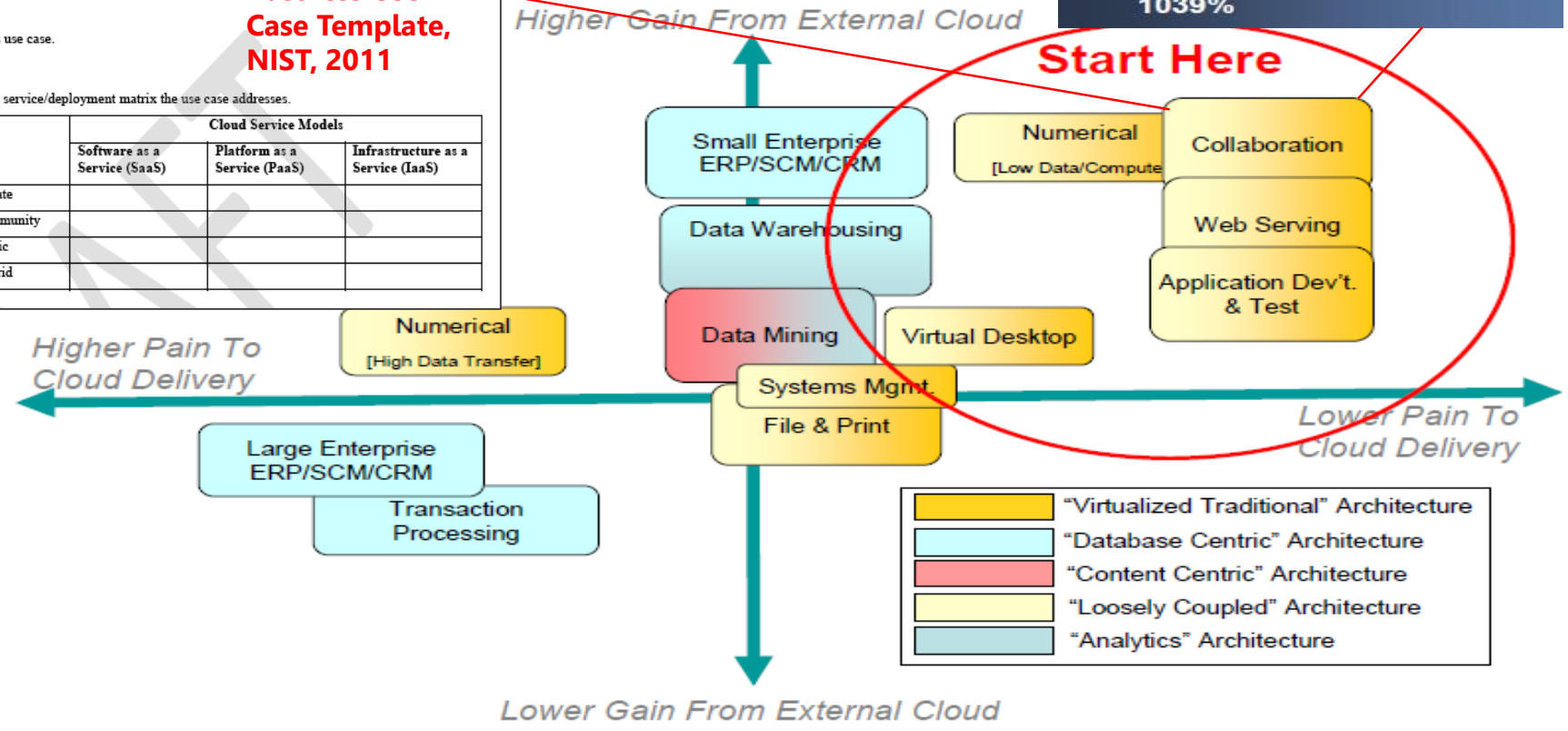
1.3. Model Matrix

Identify which intersections of the service/deployment matrix the use case addresses.

		Cloud Service Models		
		Software as a Service (SaaS)	Platform as a Service (PaaS)	Infrastructure as a Service (IaaS)
Cloud Deployment Models	Private			
	Community			
	Public			
	Hybrid			

Cloud Computing Business Use Case Template, NIST, 2011

Business case results
- **Annual savings: 84%**
- **Payback period: 73 days**
- **Return on investment (ROI): 1039%**



CASE STUDY: CLOUD ADOPTION STRATEGY

U.S. Government

CREATE CLOUD ADOPTION ROADMAP

- It is not simply a case of flipping a switch to adopt cloud services; business process redesign, IT management capabilities, systems integration, infrastructure and configurations are all part of the transition process and each require investment to get it done right.
- Use the maturity models to assess the current maturity of infrastructure virtualization, ITSM, security management, application architecture, data management, BPM and IT governance.
- Cloud adoption is easier, takes less costs and produce more benefits, the better the infrastructure is virtualized, ITSM processes are standardized and automated, security policies are elaborated, SOA is stabilized, the metadata is enterprise-wide managed, and BPM practices are established.
- If these preconditions are too immature, it is better to make a longer-term roadmap to improve them, and choose the right timing to adopt cloud services in consideration of the maturity levels of those areas.

Readiness Check	Assess the current state and maturity level of each focus area and evaluate the readiness for transition to clouds.
Cloud Roadmap	Select workloads that are relatively ready for early migration to public or private clouds. Develop a multi-stage roadmap plan to acquire cloud capabilities for each focus area.

DEVELOP BUSINESS CASE

- Cloud services require focus on vendor selection, contracting and SLAs. Overall, vendor viability risks are high as the cloud early market moves at such a fast pace. Navigate the subscription options to figure out which will create the best deal overall.
- Examine the ROI that cloud computing can bring. Start by calculating the absolute savings—including, for example, hardware costs, software licenses and upgrades, system administration, system support, end user support and provisioning. Also include business-related benefits, such as increases in user productivity and resource utilization; avoidance of capital expense; and reduction of risk due to higher availability.
- In determining ROI, In addition to looking at first-year savings and benefits, project operating costs of both the legacy IT environment and the cloud environment over three years to calculate ROI over a longer term.

Define Cloud Projects	Define the scope of each cloud projects so that a high ROI can be obtained within 3-12 months. Determine the vendor, service contract and SLA.
Cost/Benefit Analysis	Estimate the total cost of ownership (TCO) to include both capital and operational expenditures. Estimate the benefit and compute ROI.
Business Case	Write up the business case for each cloud project specifying the benefits, goals and metrics.

COST/BENEFIT ANALYSIS

Benefits	Costs	
	Upfront CapEx	Recurring OpEx
▪ Reduction in licensing, and user training and support costs ▪ Elimination of maintenance costs ▪ Reduction in IT service management costs ▪ Avoidance of infrastructure investment ▪ Increase in user productivity and business performance	▪ Implementation costs ▪ Single sign-on configuration ▪ Third-party process consulting ▪ Third-party content development ▪ Competency Development ▪ External content	▪ Subscription ▪ Change management ▪ Testing and certification ▪ End user support and administration ▪ Integration ▪ Training

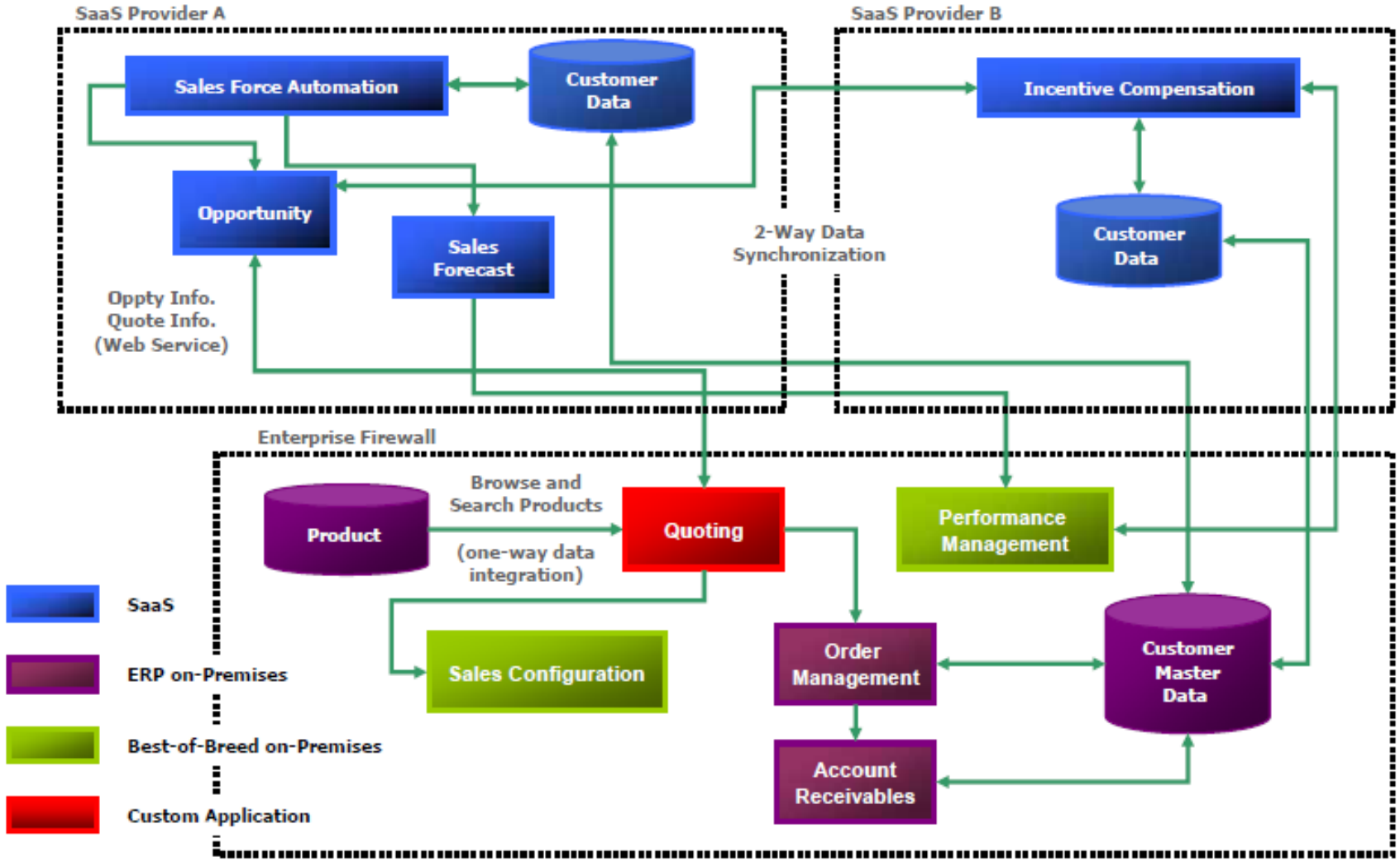
ANALYZE REQUIREMENTS AND DESIGN ARCHITECTURE.

- Migration to clouds requires identification of business processes to use clouds, redesigning the processes to consume clouds, determining requirements for customization, data mapping and migration, and integrating the cloud with legacy applications and with each other.
- Visually model the links between cloud services and internal systems, viz., what processes and which information crosses these boundaries and where the service provider—on-premises or off-premises—is located.

Select Business Processes	Select and redesign business processes to use the chosen cloud services
Fit/Gap Analysis	Analyze the gaps between the to-be processes and the cloud services and determine requirements for customization
Integration Architecture	Design the integration architecture to link between cloud services and internal systems and between different cloud services
Cloud-Specific Components	Add cloud-specific components to the EA such as cloud service OSS and BSS components

CLOUD INTEGRATION

- Many cloud solutions focus on a specific module, and does not offer full suite solutions.
- 75% of large enterprise SaaS deployments have at least five integration or interoperability points to on-premises apps (Gartner).
- This multivendor environment means additional costs for areas like integration, provisioning, end user support, upgrade management, testing, and workflow.



IMPLEMENT THE CLOUDS

- Model-driven process orchestration and metadata-based development techniques and domain-specific languages for specific vertical industries are growing in terms of vendor offerings and user adoptions.
- Business analysts should fulfill process orchestration, data federation and test case generation roles in collaboration with developers.

Analyze Use Cases	Identify uses cases for both business end users and service administrators, and non-functional requirements as well
Develop Test Plan	Develop test plans to ensure functional and non-functional quality of cloud services
Implement and Test	Customize, if necessary, and implement the cloud services, integrate them with internal systems, conduct system tests and acceptance tests, and release the services for a pilot
Roll Out	Roll out to the full-scale adoption after stabilizing the services through the pilot

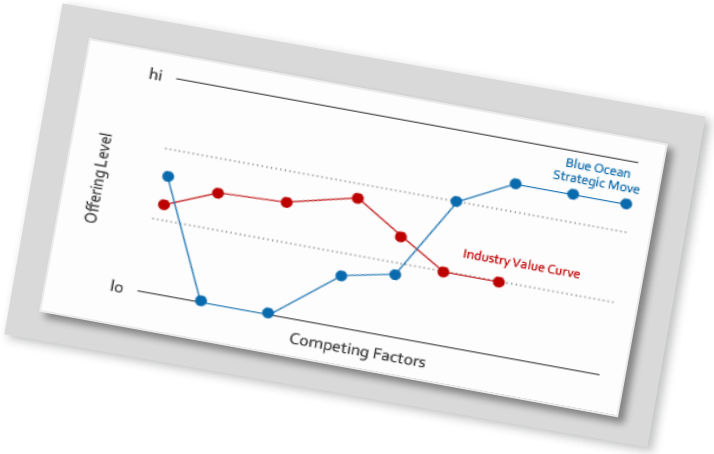
BUSINESS PLAN

- Product and Service Plan
- Marketing Plan
- Operations Plan
- Organization Plan
- Financial Plan

BUSINESS PLAN

Product / Service | **Marketing** | **Operations** | **Organization** | **Financial**

- Describe the cloud service or cloud brokerage services you plan to develop a nd sell
  - Features and use cases
  - Target customers and their profiles
  - Value proposition
  - Platforms and complementors
  - Incumbent competitors
  - Competitive advantage and niche
    - Strategy Canvas
  - How to fend off imitators?
  - Any potential substitute?



BUSINESS PLAN

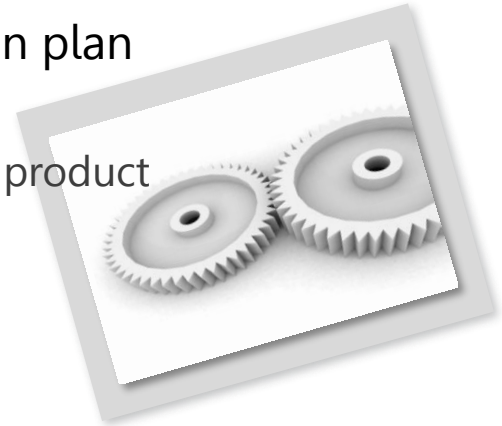
Product / Service | **Marketing** | Operations | Organization | Financial

- Describe your marketing and sales plan
  - Current demand and future trends in the target market
  - Barriers to market entry and how will you overcome them?
    - Patents, unique technology, brand recognition, etc.
  - Where are visionary early adoptors who can help you develop a right service?
  - How will you develop the market awareness about your service?
    - Product positioning, Web marketing, advertizing, etc.
  - Channel partners
  - What is the right price and how will you find paying customers?
  - Market growth potential and sales forecast

BUSINESS PLAN

Product / Service | Marketing | **Operations** | Organization | Financial

- Describe your product and service development and operation plan
  - Product/service and market development process
  - Facilties, infrastructure and platforms required for developing the product
  - Product and service architecture
  - Software engineering methods, tools and skills required
  - Laws and regulations affecting your product and services
  - Service operation and management functions and platforms
    - Self-service contract and service-level agreement, real-time provisioning, service monitoring and metering, billing and payment, etc. for cloud services
    - Engagement process, service delivery method, service management system, CSB platform, etc. for cloud brokerage services
  - Product and service development schedule and budget



BUSINESS PLAN

Product / Service | Marketing | Operations | **Organization** | Financial

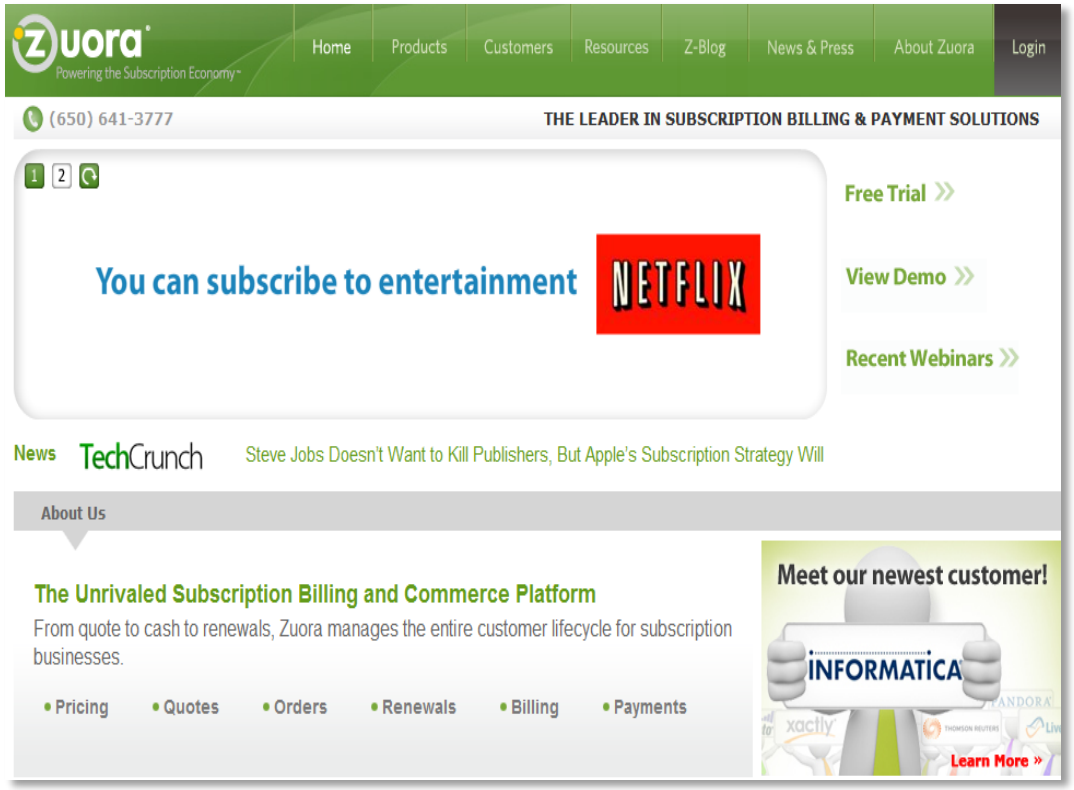
- Describe your organizational plan
  - Company's mission and vision
  - Legal form of ownership
    - Sole proprietor, partnership, corporation, etc.
  - Professional and advisory support
    - Board of directors, advisory board, venture capitalist, attorney, etc.
  - Startup management team members and their expertise
  - Jobs, roles, responsibilities and required skills and how many to employ for each role
  - Essential processes and training

BUSINESS PLAN

Product / Service | Marketing | Operations | Organization | **Financial**

- Perform financial analysis and describe your financing plan
  - 1-5 year profit and loss projection
    - Capital expenditures, revenues, operational expenses, contingencies
  - Projected case flow statement
  - How much will be contributed by each investor to the startup capital and what percent ownership each will have
  - Break-even point, IRR, NPV
  - Financing plan
    - Bootstrapping, angel fund, ventual capital

- Tien Tzuo, ex-chief strategy officer of Salesforce.com, and K. V. Rao, ex-head of strategic marketing and business development at WebEx, founded Zuora in December 2007.
- Zuora's vision was that the world was moving towards the subscription economy, so that a state-of-the art, flexible and low-cost billing solution will become increasingly valuable.
  - Rhapsody eliminated the need to buy music tracks.
  - NetFlix allowed people to subscribe to the whole library of movie DVDs.
  - Zipcar eliminated the need to buy cars, turning car transportation into a pay-as-you-go utility.



Zuora Inc.: Venturing into Cloud Computing, Stanford Graduate School of Business, 2009.

CASE STUDY: SAAS START-UP BUSINESS

Zuora

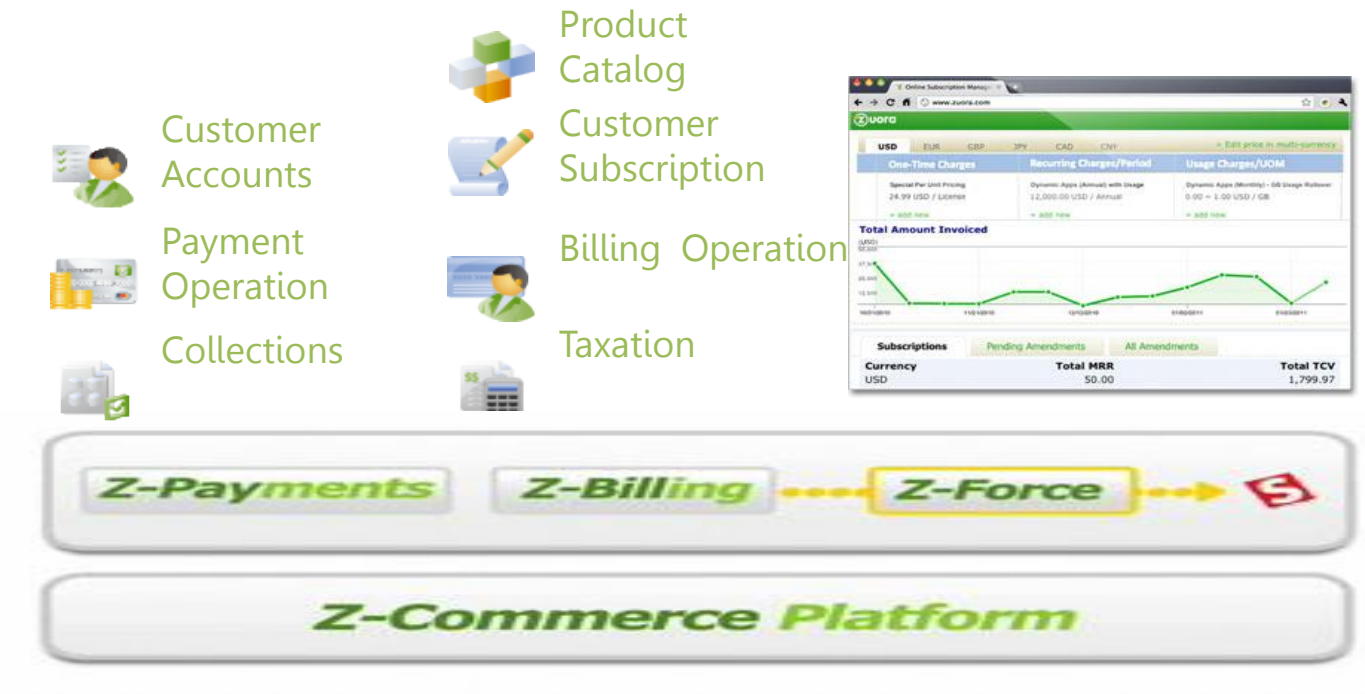
- Tzuo and Rao both knew that billing solutions are a huge unaddressed paint point for SaaS companies—it plays a critical role in growing a SaaS business, but building one is a money pit because it is so complicated to make it flexible and scalable.
  - It takes 6-12 months and cost hundreds of thousands dollars to implement a system in-house for subscription pricing and billing.
  - For example, Redhat spent $20M in order to create a billing system in-house.
- Zuora worked with 5 alpha customers to develop the billing module called Z-Billing by May 2008, and then developed Z-Payments with partnership with PayPal by October 2008—both aimed at subscription type businesses.
  - Zuora got the Series-A funding of $6.5M.
  - By the end of 2008 Zuora had sold the Z-Billing product to 70 customers.
  - Zuora raised a second round of $15M.

Stage	Investors	Valuation
Concept / Business Plan	Self or Friends & Family	$250k to $1m
Technology Developed	Angels, Seed VCs	$1m to $5m
Launch / Early Customer Traction	Seed VC, Series A VC	$5m to $15m
Scaling and Adoption (Cash Flow Negative)	Series A / B / C VC	huge variability: $15m to $30m (with outliers to $100m)
Rapid / Mass Expansion (Cash Flow Positive)	IPO or Exit (Public Co. or Strategic Acquirer)	huge variability: $100m to $1b (avg. IPO of $500m)

CASE STUDY: SAAS START-UP BUSINESS

Zuora

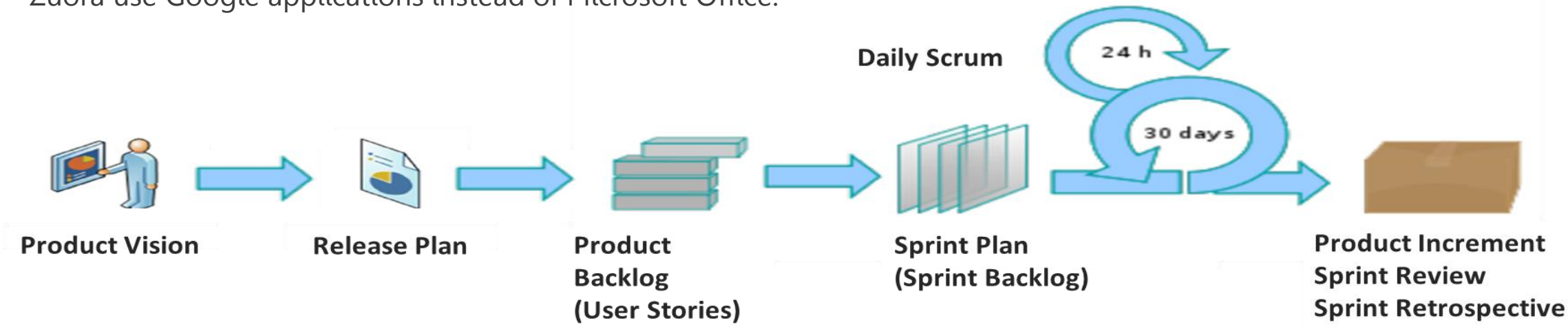
- In January 2009, Zuora released Z-Commerce, online billing platform geared towards the cloud developers who could use Zuora's service in a plug-and-play model.
- This product allows Java, Ruby and Force.com developers to plug in a few lines of code in their service and use Zuora's full-fledged billing, payments and subscription service management services.
- In November 2010, Z-Force was launched which is a billing and payments service that resides on Force.com, aimed at instant access to the huge customer base of Salesforce.com.



CASE STUDY: SAAS START-UP BUSINESS

Zuora

- Zuora has about 20 developers operating out of Beijing and 7 developers in Redwood City, California led by Ryan Choi.
- Products are run (without its own data center) on a set of cloud services from companies like CVSDude, Amazon and Marketo.
- Zuora adopted an agile development process anchored by a modified scrum methodology and is able to release new versions of its applications every 4 weeks.
- Zuora use Google applications instead of Microsoft Office.



CASE STUDY: SAAS START-UP BUSINESS

Zuora

- Generated a high level of awareness of the company and its products in the marketplace, then using that awareness to drive people to its web site.
- Web visitors are encouraged to identify themselves, then contacted by a sales development team responsible for qualifying the leads.
- Qualified leads were then passed to an account executive.
- Zuora is pushing a wide spectrum of customer segments with deals ranging from $1K to $100K.
- Churn management is treated a critical part of the business model because customers only pay as long as they continue to use the service.

CASE STUDY: SAAS START-UP BUSINESS

Zuora