

# *Successful Entrepreneurship for Microsystems*

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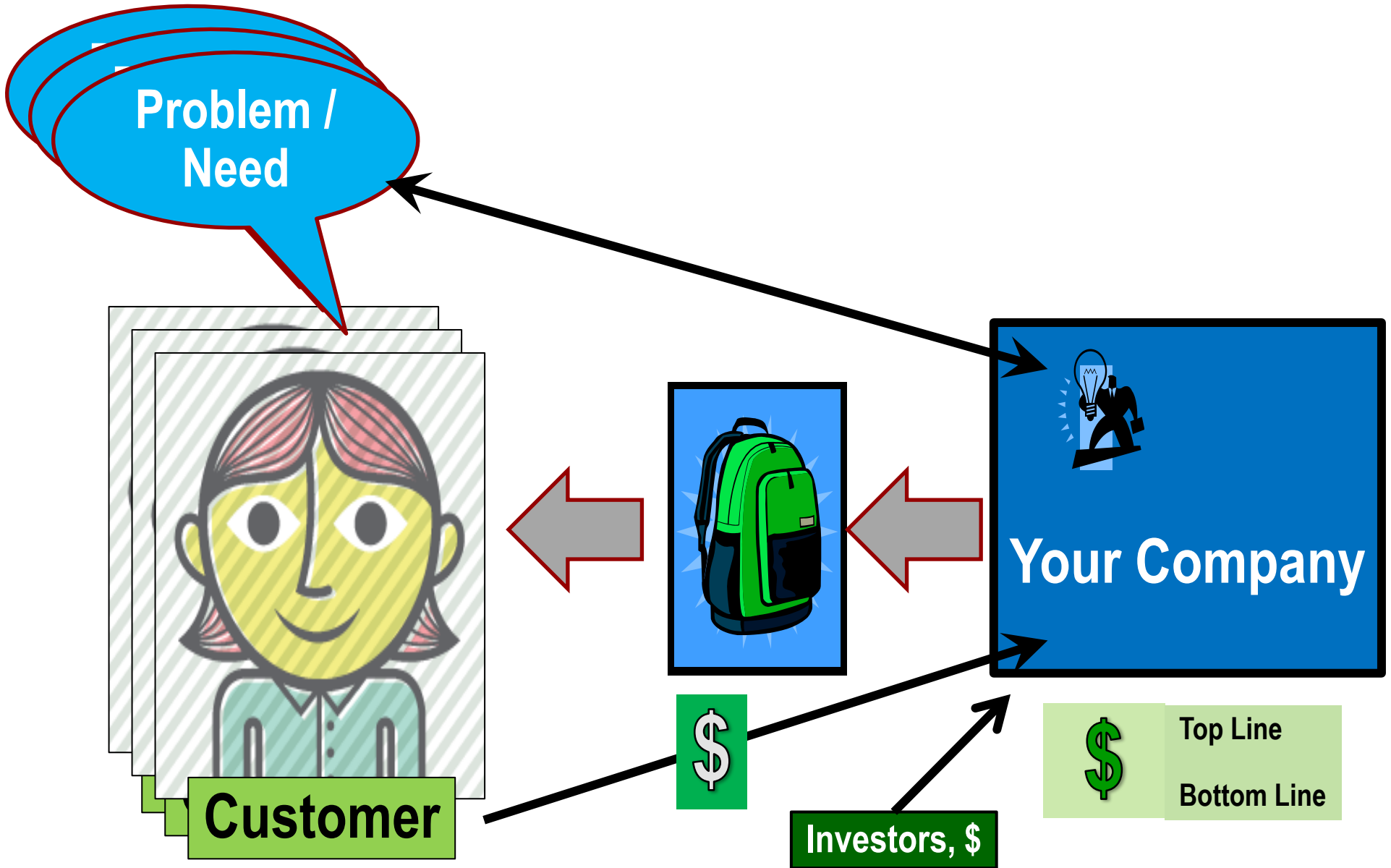
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Course presented at UCSD CSE 190, Spring Quarter 2015

# Towards a Successful Startup

... "Plan A" – an iterative process



# Presentation Key Elements

## PRODUCT

- **What** is your offering – a “Tag” line? ...basis for 60second “elevator pitch”
- **What** is the problem you are solving?
- **What** is your solution?
- **How** you do it?

## CUSTOMER DIFFERENTIATION

- **Who** will buy it? ...Market Research, GET OUT and TALK to Customers
  - How much will they pay?
- **Who** is your competition?

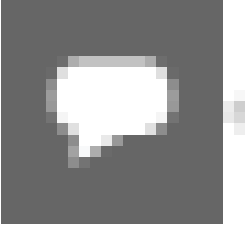
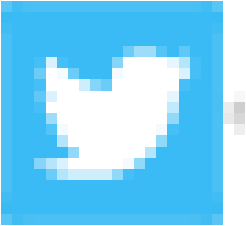
## MARKET BIZ MODEL

- **What** is the Market Size?
- **How** will you Market it? Channels?
- **What** is the Business Model?
  - **How** will you make Revenue? Profit?

# “HUG”

A mobile app that  
makes efficient your social media experience  
Or adds efficiency to your social media experience  
Or organizes and adds efficiency to your social media experience

# Current situation



# The Hug way



# Hug – how we do it

- A proprietary AI algorithm that is an “Aggregator”

# Hug – Who is the Competition?

➤ What is your UVP / Differentiation?



# Target Market

## ➤ Initial Customer feedback

- x/20 potential customers say they are very interested to Hug it !

## ➤ College students and young adults

- Alpha – selected 10 students at UCSD, and 10 ‘friends of friends

- Beta – sample of 100 UCSD students, and 100 other young adults

- iStore and Google Play store

# Market Analysis

- Size of market in terms of numbers.  
E.g., the number of 20-year olds, if that's your target demographic.
- Size of market in terms of dollar value.  
E.g., based on sales of similar products or other metrics.
- How much of the market will you capture?
- Competition: who are the other players in the field?
- Other relevant details.

# Business Considerations

- Revenue from iStore/PlayStore
- Revenue from Google Adsense ads
- <20 employees

# Income Statement

# Exit Strategy

- License
- Get acquired

# Business Model Canvas

# Team

- CEO
- CTO
- CMO
- COO
- Customer Rep

# “DigiBag”

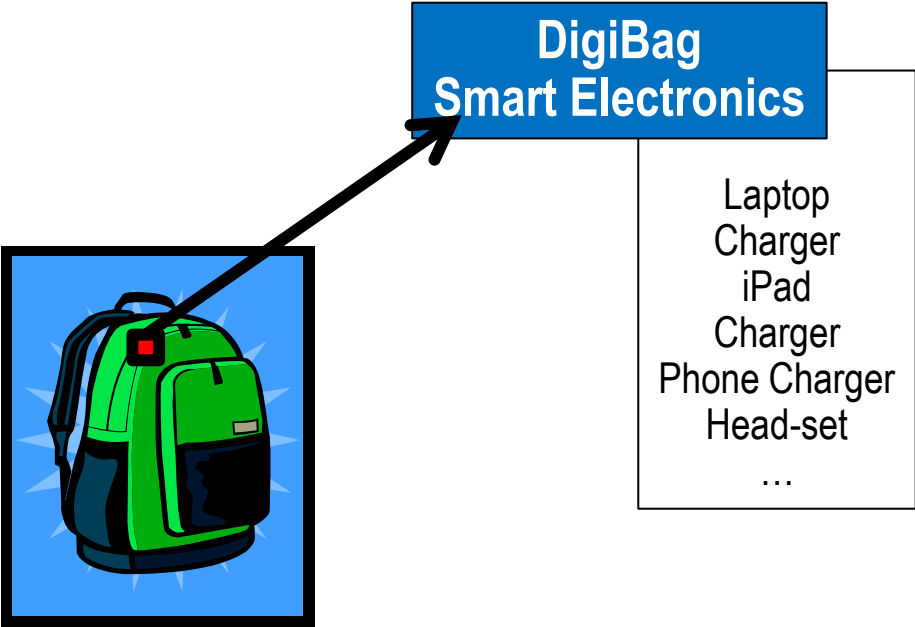
A “Smart” bag that synchs electronic devices,  
and sets an alert for missing devices



# Current situation – the Problem

- We all carry a plethora of electronic devices in our backpacks, briefcases, purses
- How often have you missed having the right power charger, head-set,...?

# DigiBag's solution!



# DigiBag – how we do it

- Smart Electronics unit built from off-the-shelf component initially allows devices to be connected via NFC
- Follow on devices will be built using FPGA's, and a custom designed Integrated Circuit

# Product Roadmap

## ➤ Phase 1

- Smart Electronics built using off-the-shelf components
- Bags procured from overseas
- Final assembly in San Diego
- Marketed thru online sales – Amazon, eBay etc.

## ➤ Phase 2

- Smart Electronics built using an FPGA
- Bags procured from overseas
- Final assembly in San Diego
- Marketed thru online sales – Amazon, eBay etc.
- Will seek to license to name brand backpack and briefcase manufacturers – Samsonite, Swiss,...

## ➤ Phase 3

- Smart Electronics built using an FPGA
- Bags procured from overseas
- Final assembly in San Diego
- Marketed thru online sales – Amazon, eBay etc.
- Will seek to license to name brand backpack and briefcase manufacturers – Samsonite, Swiss,...

# Target Market

## ➤ Initial Customer feedback

- x/20 potential customers say they are very interested in DigiBag

## ➤ College students and young professional

- Alpha – selected 10 students at UCSD, and 10 ‘friends of friends

- Beta – sample of 100 UCSD students, and 100 other young adults

# Market Analysis

- Size of market in terms of numbers.  
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# Income Statement

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# Business Model Canvas

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## *In-class Quiz 6-1*

1. Each individual to please list the 5 essential parts of a company presentation

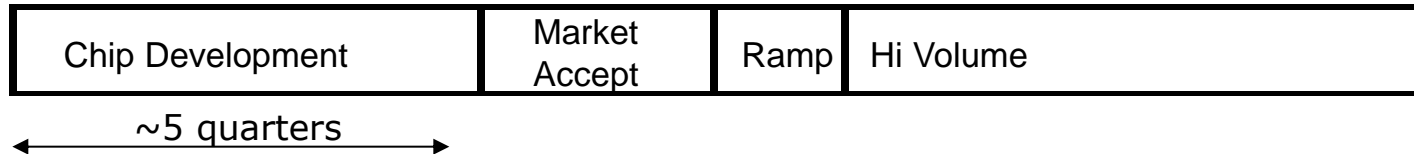
# Success elements – product positioning

<b>EXISTING</b> Standard, market, customer base	<b>NEW</b> Standard, market, customer base
<ul style="list-style-type: none"><li>➤ Super-Integration</li><li>➤ Problem solutions</li><li>➤ Evolutionary enhancements<ul style="list-style-type: none"><li>➤ e.g. Cost reduction</li></ul></li></ul>	<ul style="list-style-type: none"><li>➤ Emerging standard</li><li>➤ New features/capabilities</li><li>➤ New interfaces</li><li>➤ “Revolutionary” enhancements</li></ul>

Will Impact Schedule, Technology Selection, Design Methodology,.....

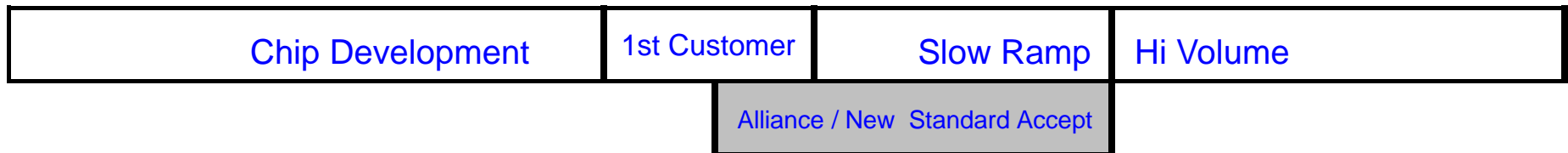
# Conceptual timeline

Existing markets:



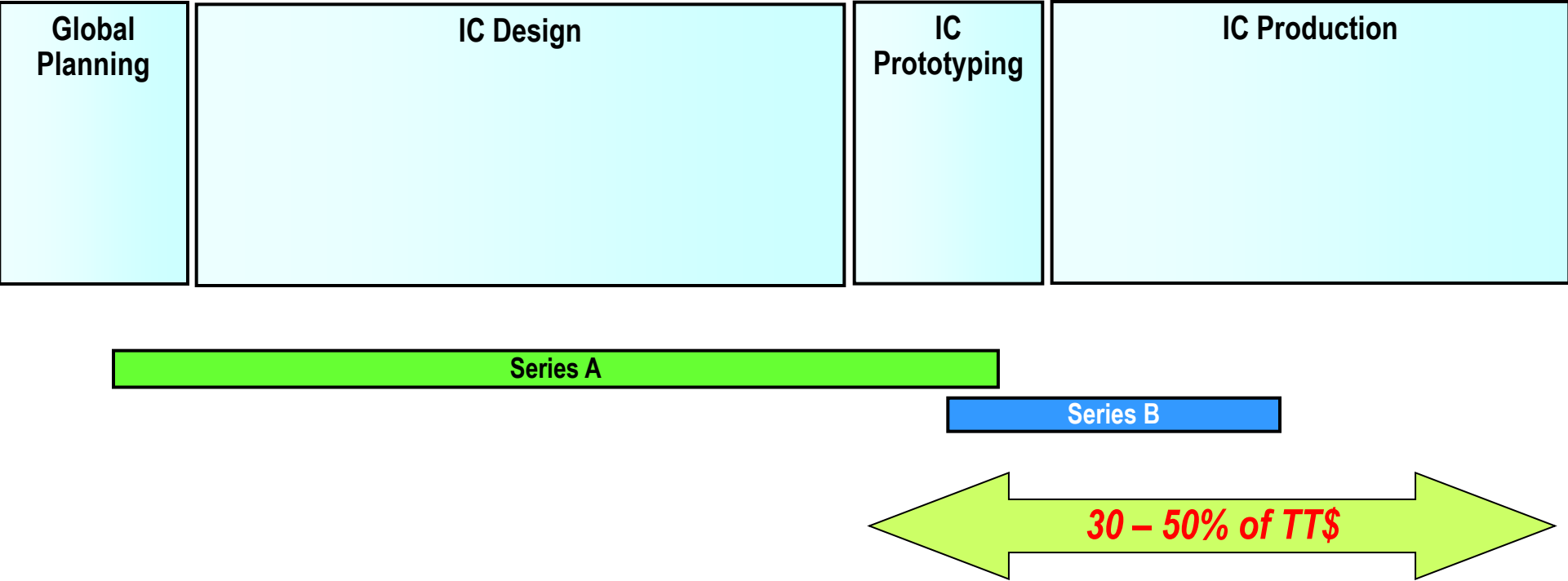
For existing markets, getting the product to market and increasing market share is important!

New markets:

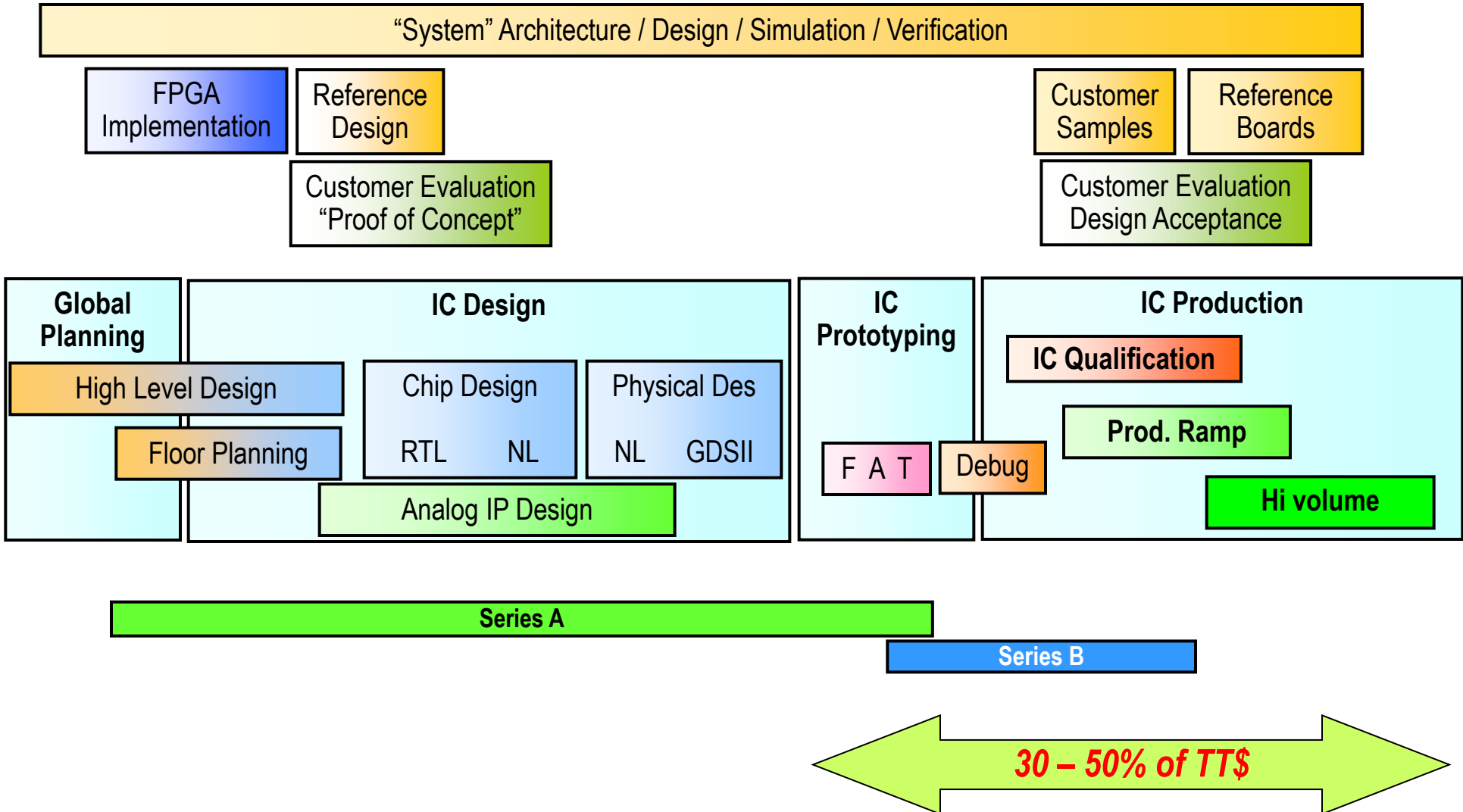


- Key: early engagement with customer to evaluate and validate the new chip.
- J. Fiebiger (Board Directors Actel, Mentor, QLogic):  
*“The fabless company must identify the first potential customer early. It is important to have customer’s input in shaping the product requirements... Investors and suppliers will get a favorable story when they perform due diligence with the customer about the viability of the product and potential volume.”*

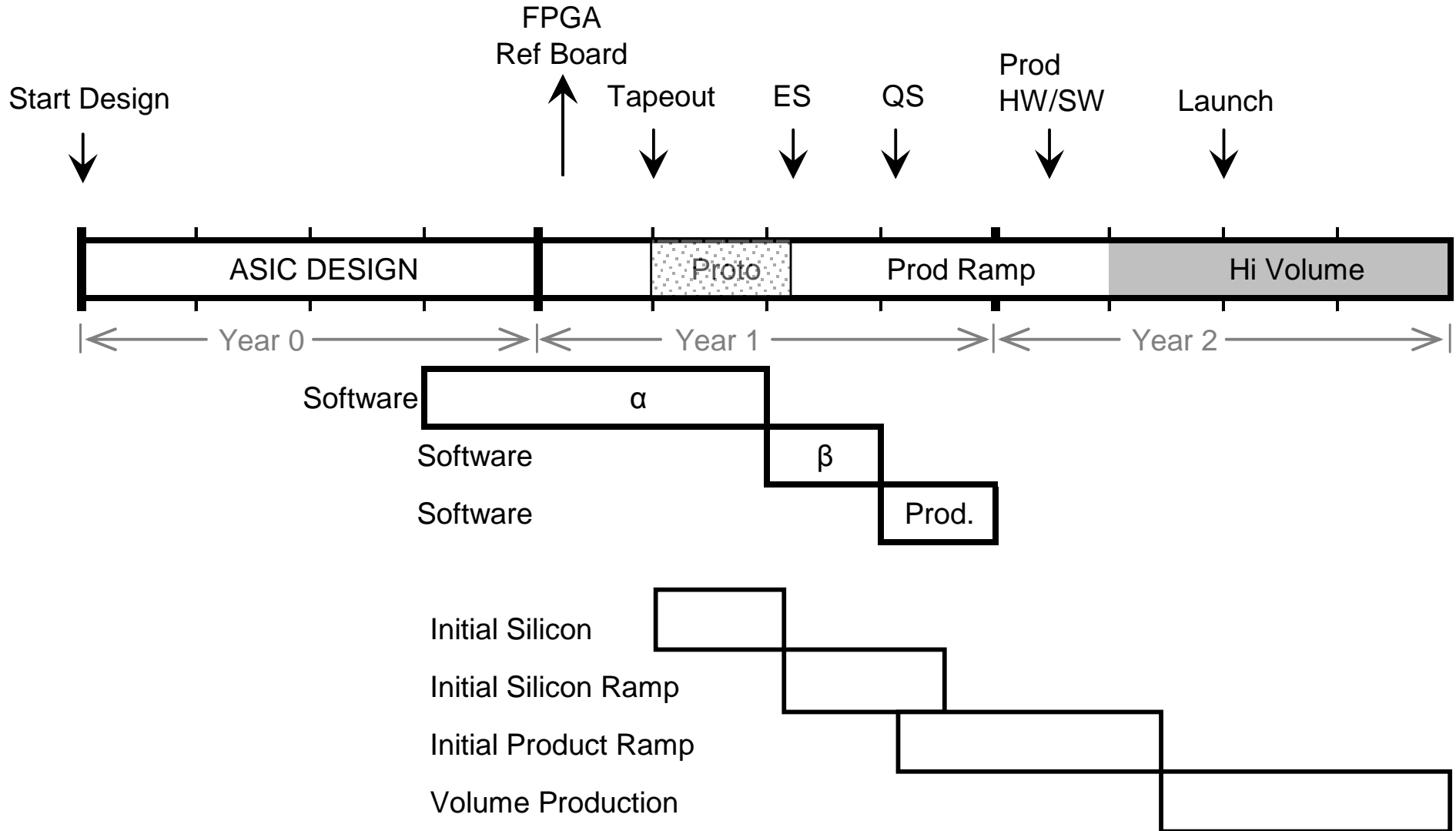
# Lifecycle of a Fabless IC development – the 4 phases



# Lifecycle of a Fabless IC development – activity highlites



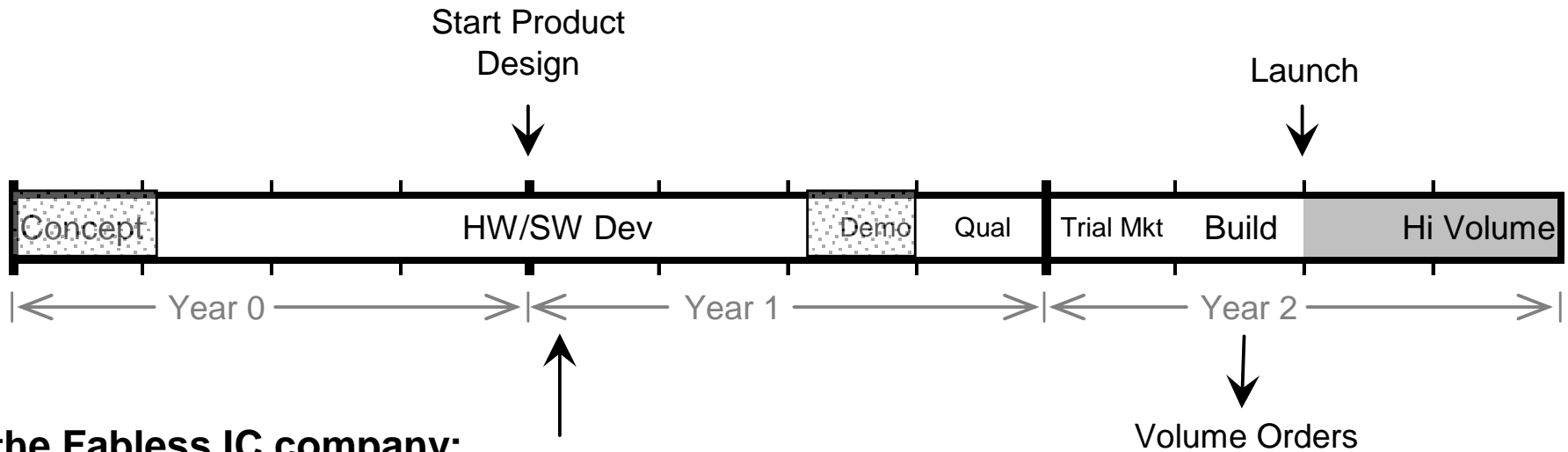
# Typical ASIC Development Cycle



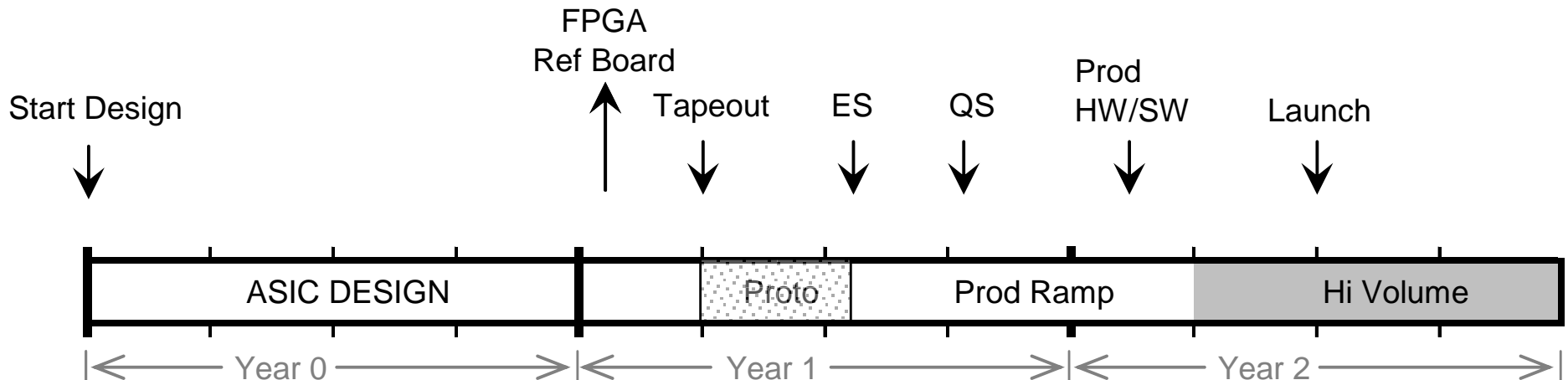


# System vs. IC Development Cycle

## a. At the System company:



## b. At the Fabless IC company:



# Success elements – market positioning

- Customer, customer's customer (value chain)
- Competition – the “big boys”?
- Market segment, TAM/SAM
- Features –existing or new standard? Customer base?




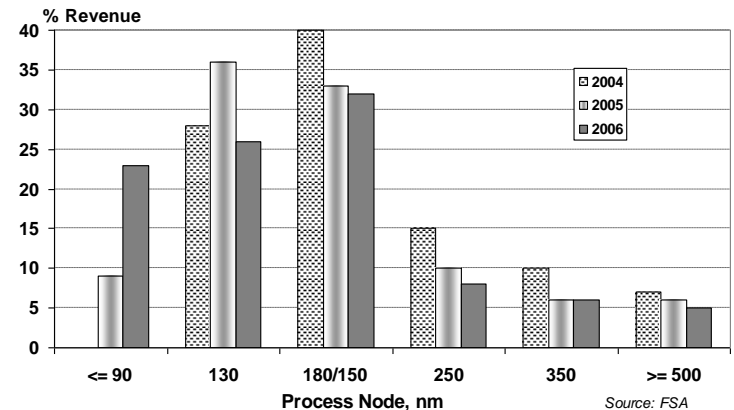
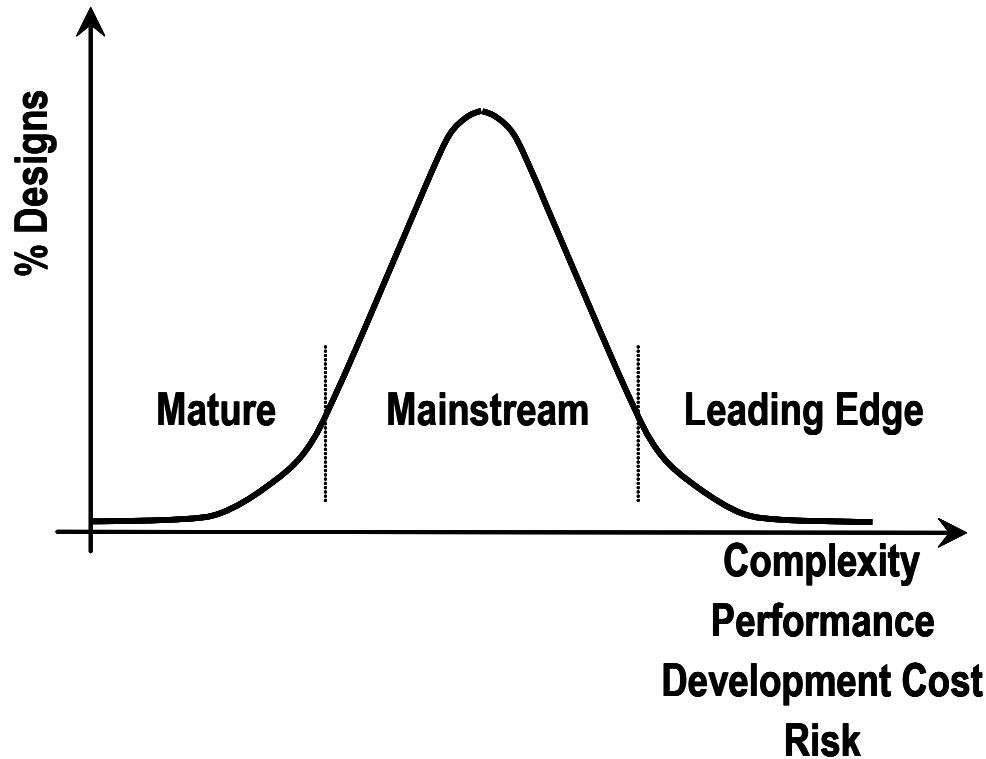
Understand customer expectations!

# Success elements – funding

- Business plan
  - A good executive summary is a must
  - Strength of the idea, the need, the market
  - Schedule
  - Revenue plan
- Select the right VC, matched to your segment and need
- Team's credibility
- Presentation

# Success elements – technology selection

- Avoid using the newest technology (process, design, packaging, ...)
  - If that is the only way you can meet the specifications..... 
- Use the **newest** technology you can **afford**, and the **oldest** technology that lets you **meet the specifications**



Process Node Maturity							
Mature			Mainstream			Leading Edge	
500	350	250	180	130	90	65	45

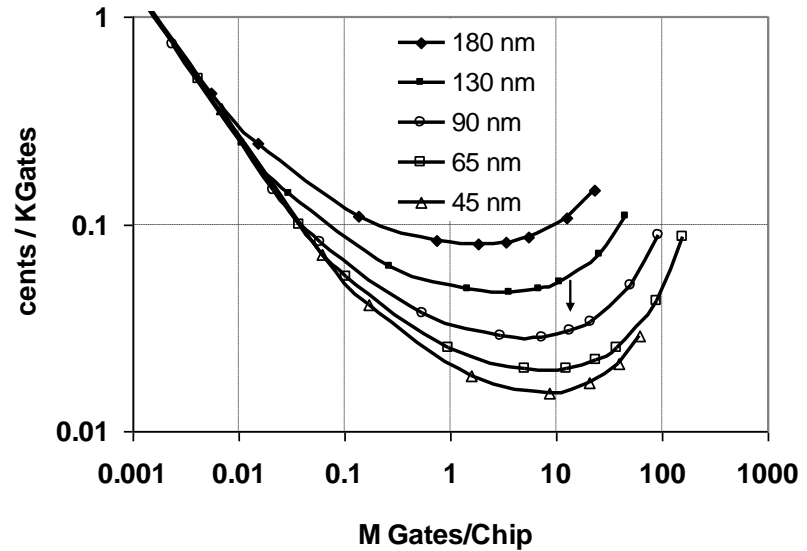
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# Success elements – supply chain selection

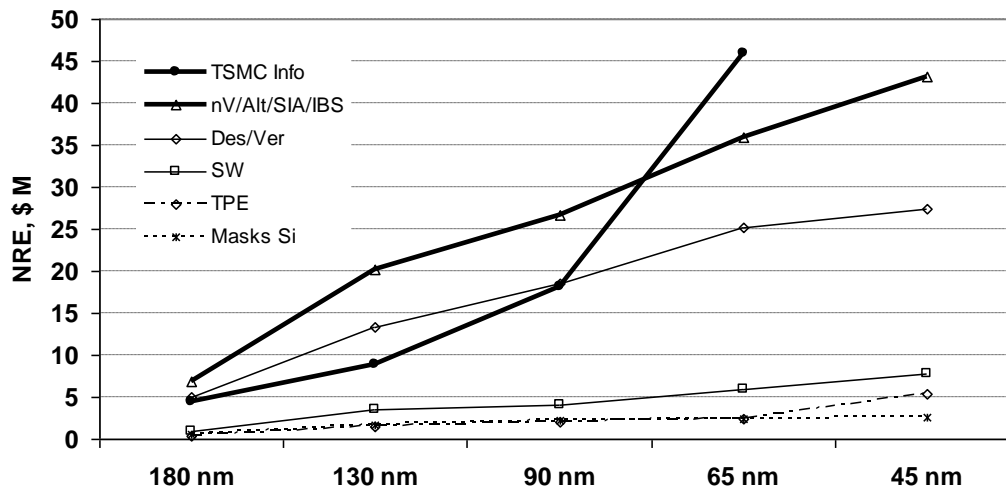
- Technical due diligence
- Business due diligence
  - Will they accept your business?
  - Confidentiality documents
  - Quotes
  - Firm up the commitments

# Success elements – cost management

## ➤ Unit cost optimization



## ➤ Development cost optimization



# Success elements – other considerations

- Sourcing methodology – FPGA, ASIC, COT,..
- Operations best practices – legal, financial, production control, customer support,...
- Quality and reliability – Quality Manual, build in quality from the start,...
- Schedule development and management
- Program management
  - Internal development
  - Management of the distributed supply chain

# Exit Strategies

- Stay private

  - scale up company at least for some years, especially if profitable

- IPO (Initial Public Offering) - go public

- M&A (Merger and Acquisition) – merge with or get acquired by a larger company