

Technology, Medicine and the Global Economy: The Perfect Storm

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IEEE Consultants' Network of Silicon Valley (IEEE-CNSV) Meeting
Del Monte Restaurant, 100 South Murphy Avenue, Sunnyvale, CA

Navigating the Storm

- FIND Opportunity
- ENGAGE the Opportunity
- MAKE MONEY

5 Checkpoints for Find – Engage – Prosper

1. Assess WHERE you “look”
2. Repackage your expertise, Give “it” away for free
3. Target consulting “wants”, leg-work versus brain-work
4. Update your money navigator
5. Live in “milestones”

Perfect Storm Industries

- ***MEDICINE***
 - *Driving Forces, Megatrends, Demands*
- ***MEMS***
 - *State-of-the-art & medicine*
- ***MONEY***
 - *World Economy, Investors, Consultants*

Driving Forces in Medicine:

- Aging populations & emerging nations
- High economic burden of health care
- Too few health care professionals
- Widely-dispersed populous

Where does your expertise fit?

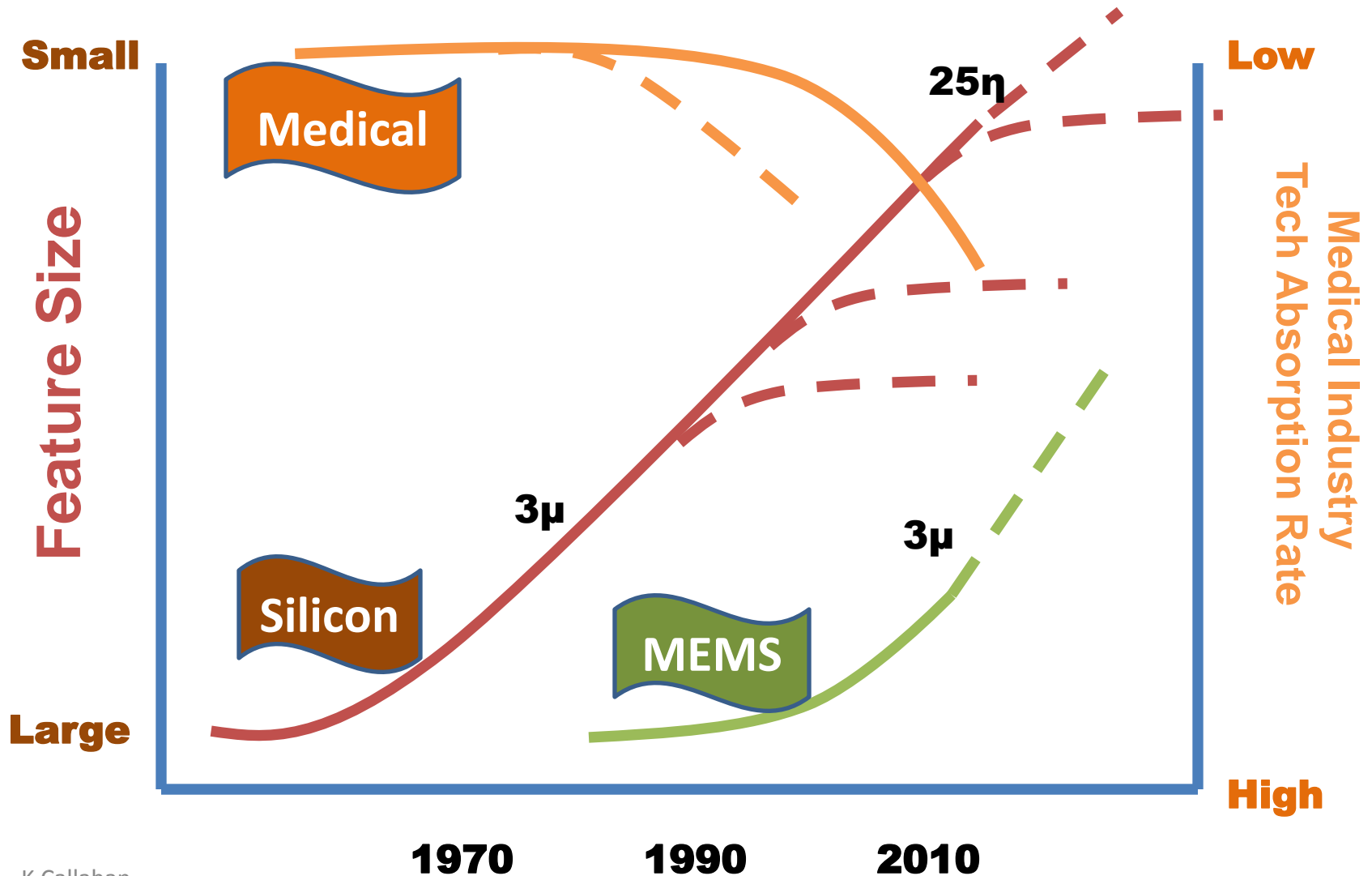
Current Megatrends in Medicine:

- “Digitized” medical info – instant access, anywhere, anytime
- Prevention versus pharma/surgical
- Repair/Restore/Replace organs, cells, etc.
- Personalized medicine

Market demands of a medical device:

- Affordable
- Available
- “Connected”
- Portable
- Easy to use

Medicine's absorptive rate increasing



Electronics in medicine is huge and growing.

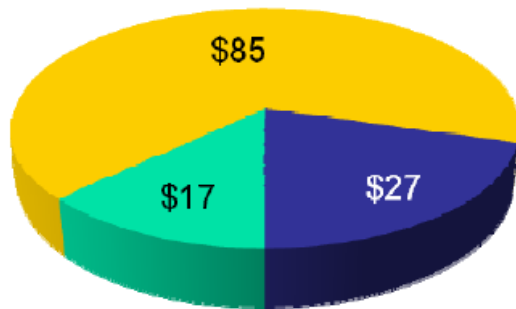
Medical Electronics

Revenue Forecast (\$B)

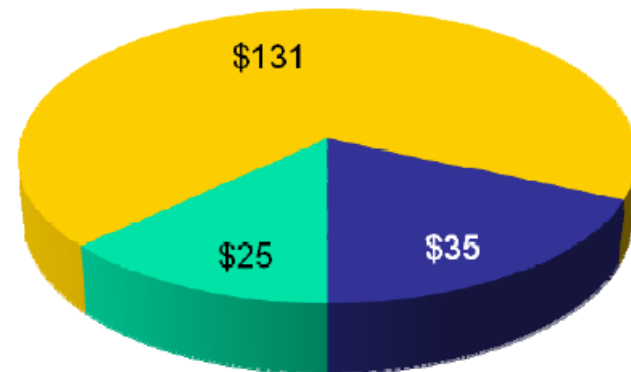
2010 = \$129B

2015 = \$191B

12% CAGR



■ Home ■ Clinical ■ Imaging



■ Home ■ Clinical ■ Imaging

Source: Tech Insights 2011

Connectivity Comes in Many Flavors

Standalone Health Monitoring Data Gateway



Philips TeleStation



**Cardiacom Commander
Telemonitoring System**



VitelCare Turtle 400



**RTX Healthcare
RTX3370 TeleHealth
Monitor**

Health Monitoring Data Gateway on TV Set-top Box



**BL Healthcare TVx
Health Set-top Box**



**Health Hero
Health Buddy TV**



**Philips Motiva TV
Health Portal**



**Card Guard & Kreatel's
IPTV Health monitoring
Set-top Box**

Health Monitoring Data Gateway on Mobile Device



**LifeWatch
LifeStar PDA**



**Research-in-Motion
Blackberry for Health**



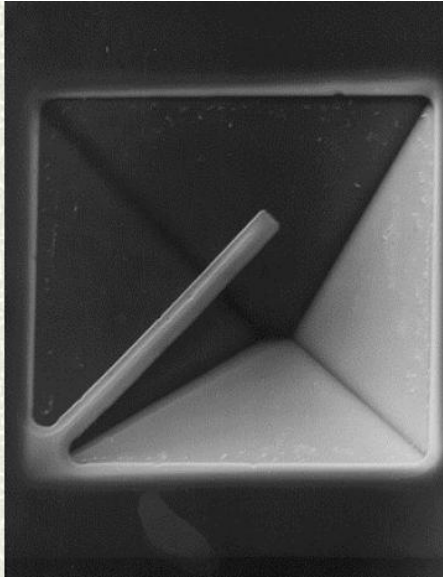
**Ericsson Mobile
Health**



Healthpia Glucophone

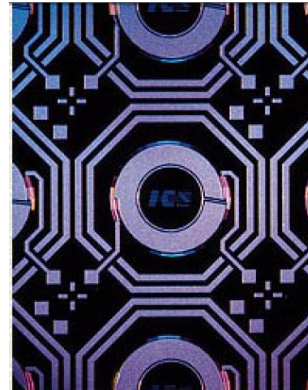
MEMS = microelectromechanical systems

Cantilever Beam

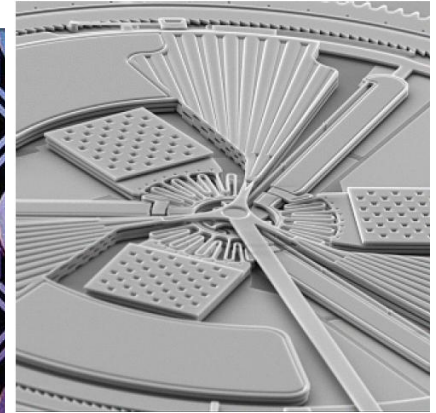


**SILICON
MECHANICAL
STRUCTURES**

Diaphragms

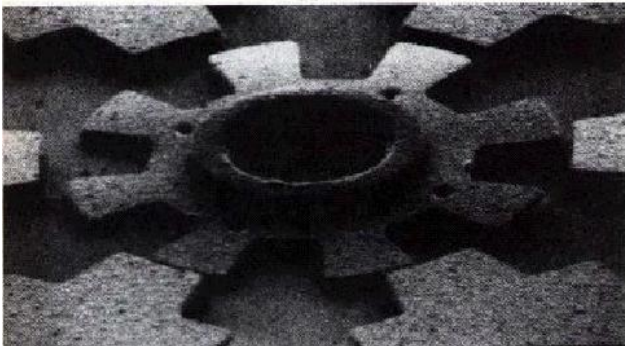


Thermal Actuator

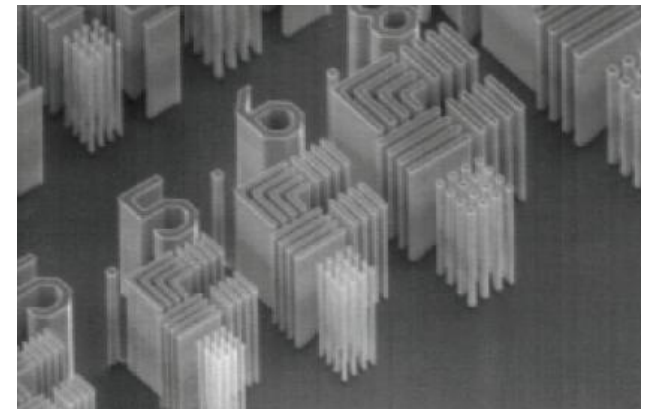
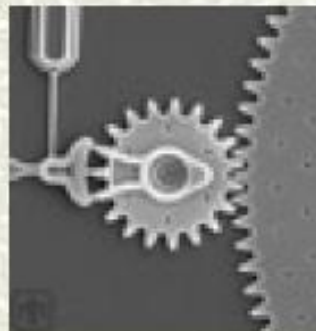
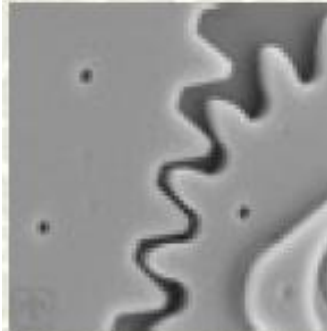


Fingers & Channels 0.25 μ m wide, 12 μ m deep

Electrostatic motor



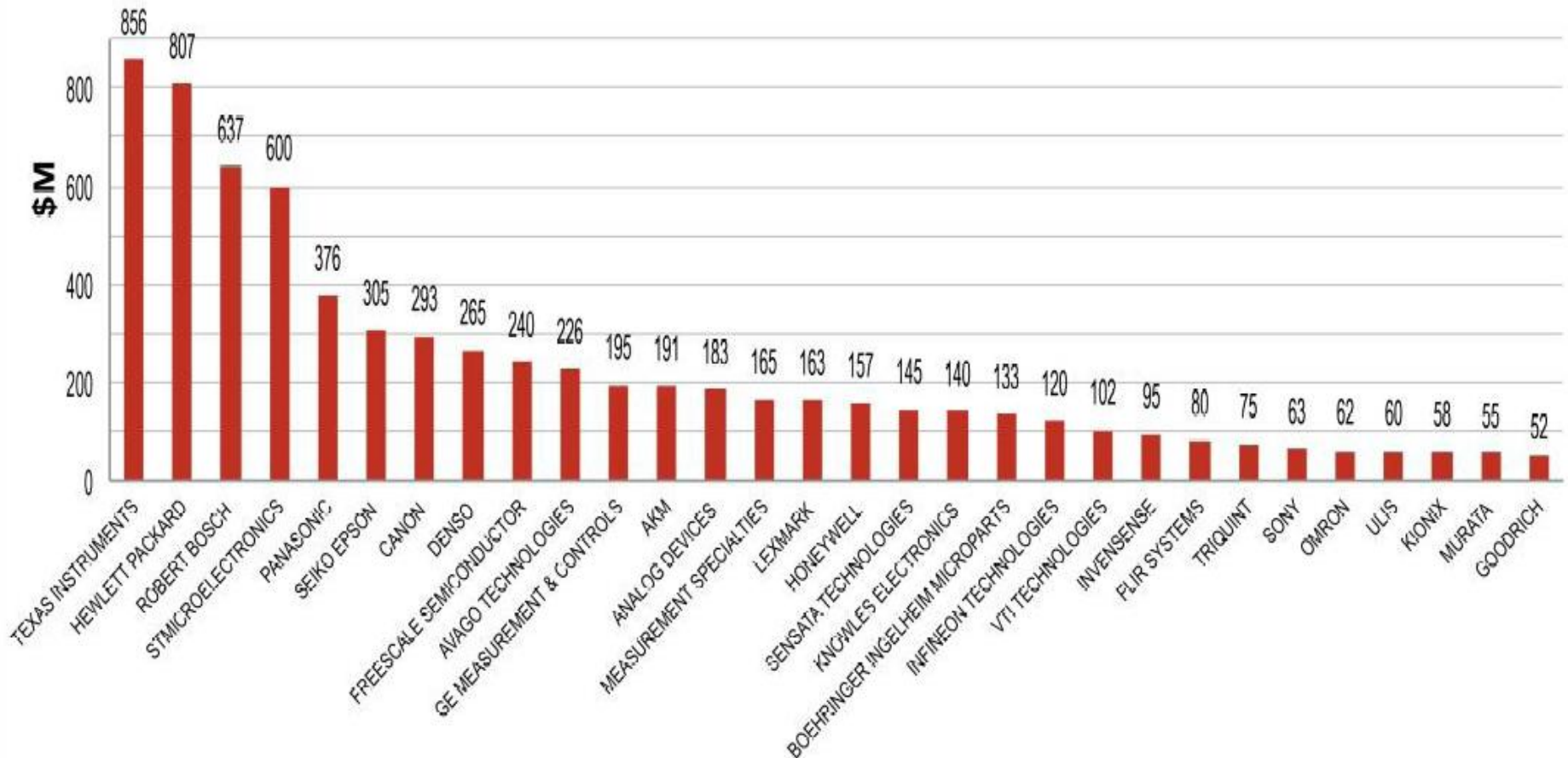
Gears



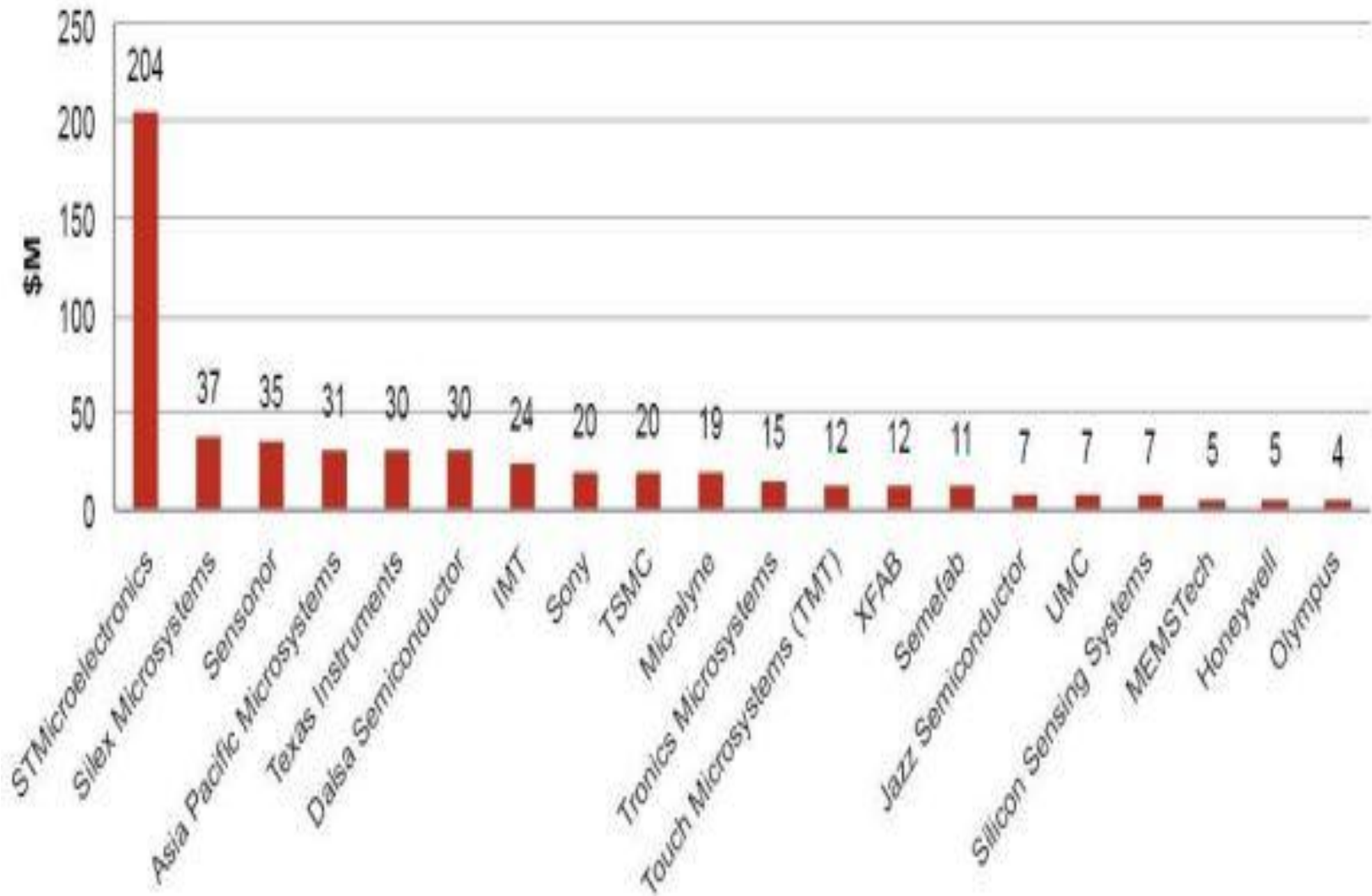
MEMS industry ecosystem is ready

Top 30 Worldwide MEMS Companies Ranking – 2010 Revenues

(Yole Développement Estimates \$M – April 2011)



Top 20 MEMS foundries by 2010 sales (\$M)

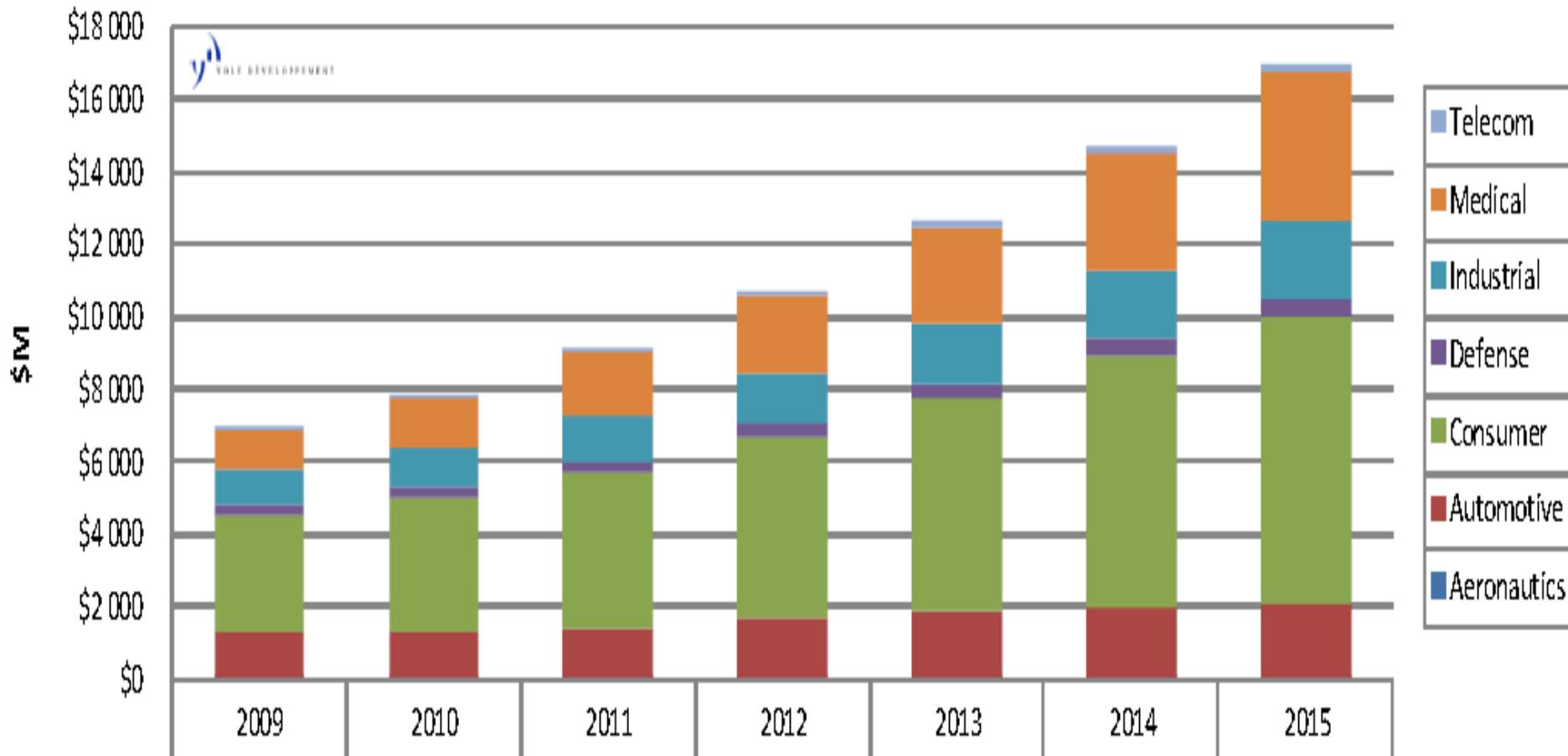


MEMS leverages Silicon Ecosystem

- Extremely well-developed material characterization.
- MEMS leverage the silicon IC technology.
- Same fabrication techniques and tools.
- Batch fabrication and spatial resolution.
- IC technology advances → MEMS advances.
- Cost and Reliability cross-overs.

MEMS race to lower costs & standards now

MEMS \$M forecast per application
May 2010



MONEY

LOTS OF CHANGES

- **What to expect**
- **Investors, IPO's, M&A**
- **Emerging & Global Economies**
- **Impact to companies/consulting**

What to expect....

Investors prefer:

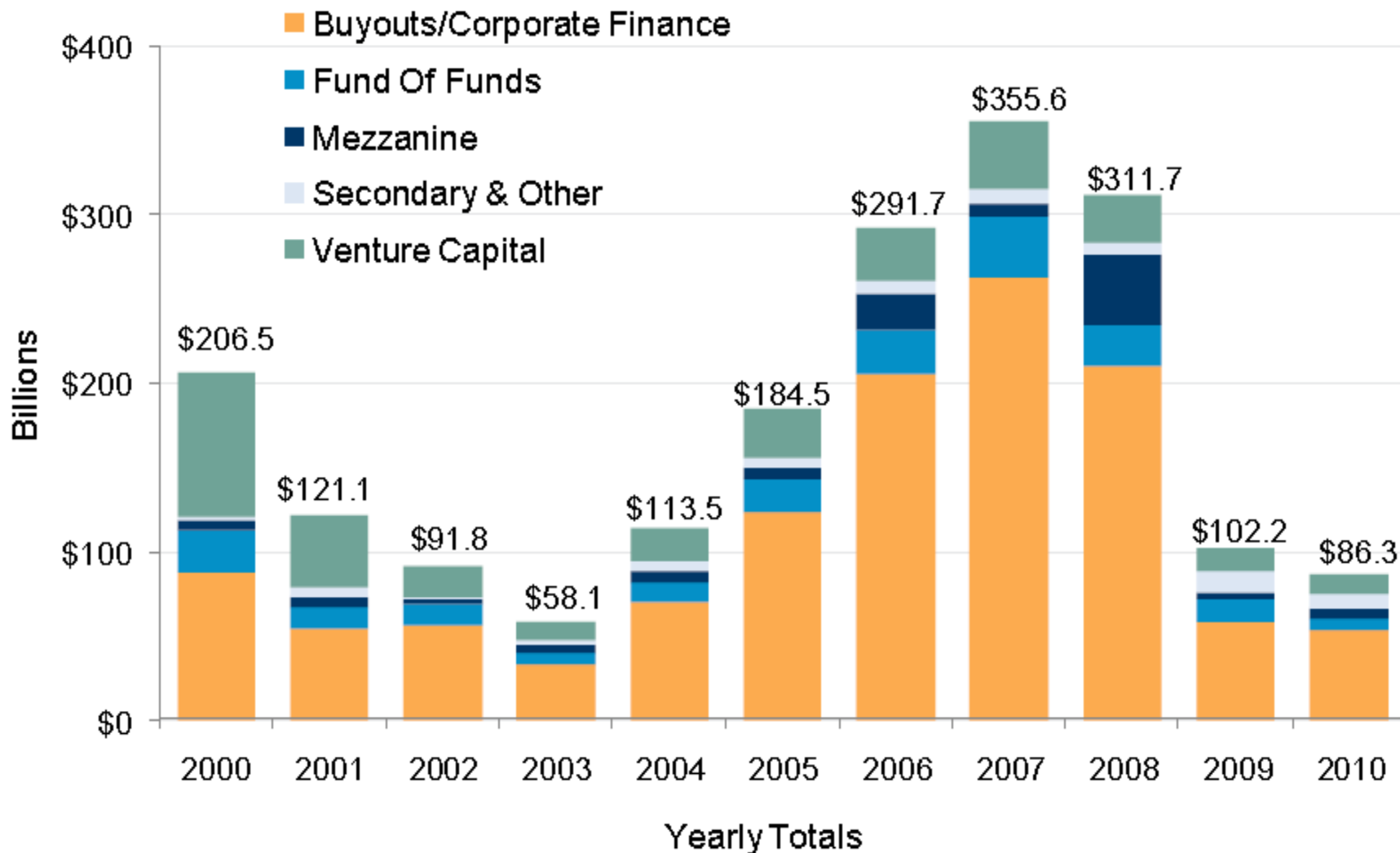
- **Expansion phase**
- **Low risk**
- **“3x” return**
- **M&A**

Investors do few:

- **Early stage**
- **<\$300K, by month**
- **Wishing for 60x++**
- **IPO's**

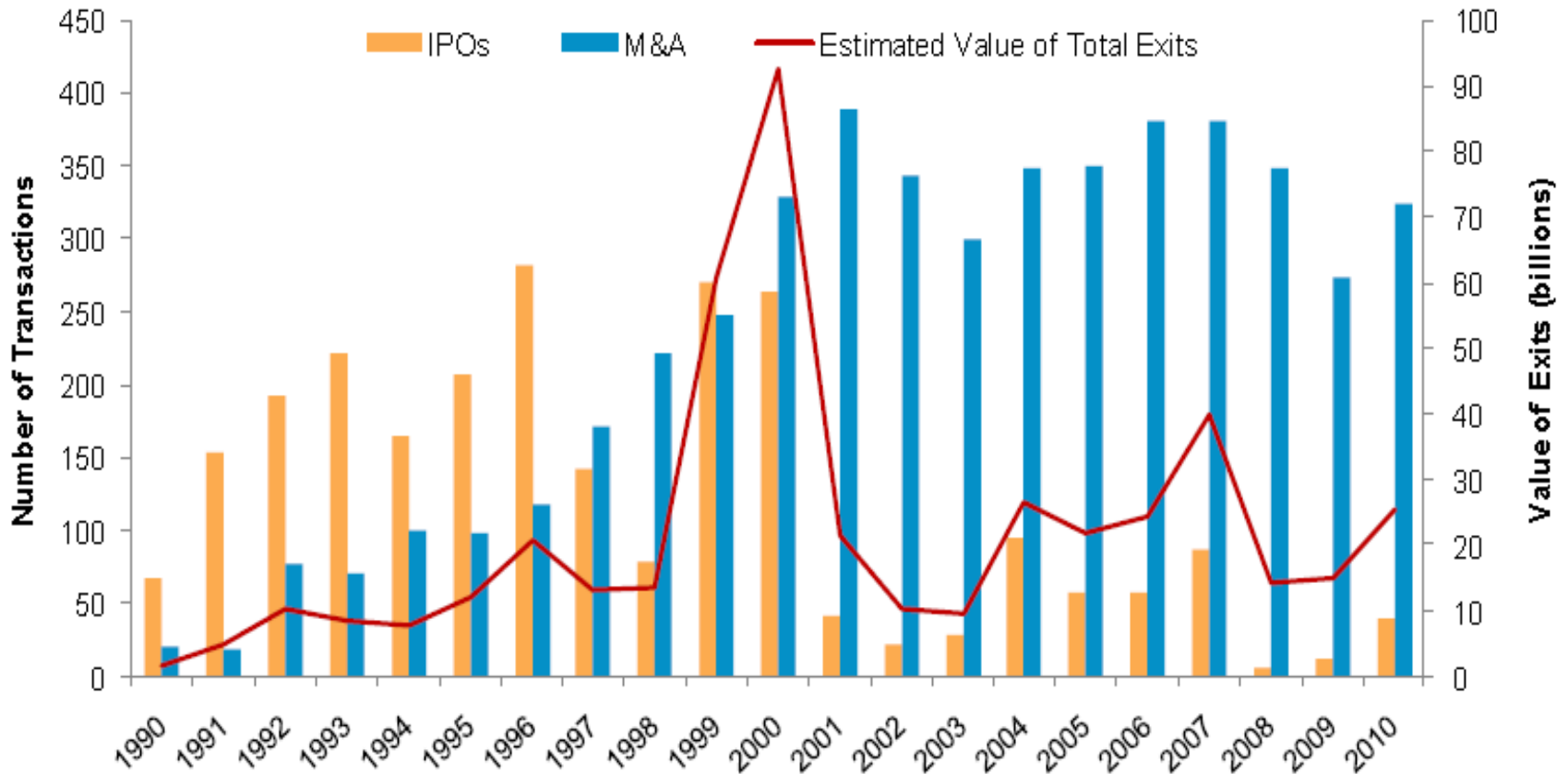
Monthly Milestones & Monthly Tranches

Investors need low risk & fast return



Companies have cash for M&A

Venture Capital Exit Activity as of December 31, 2010

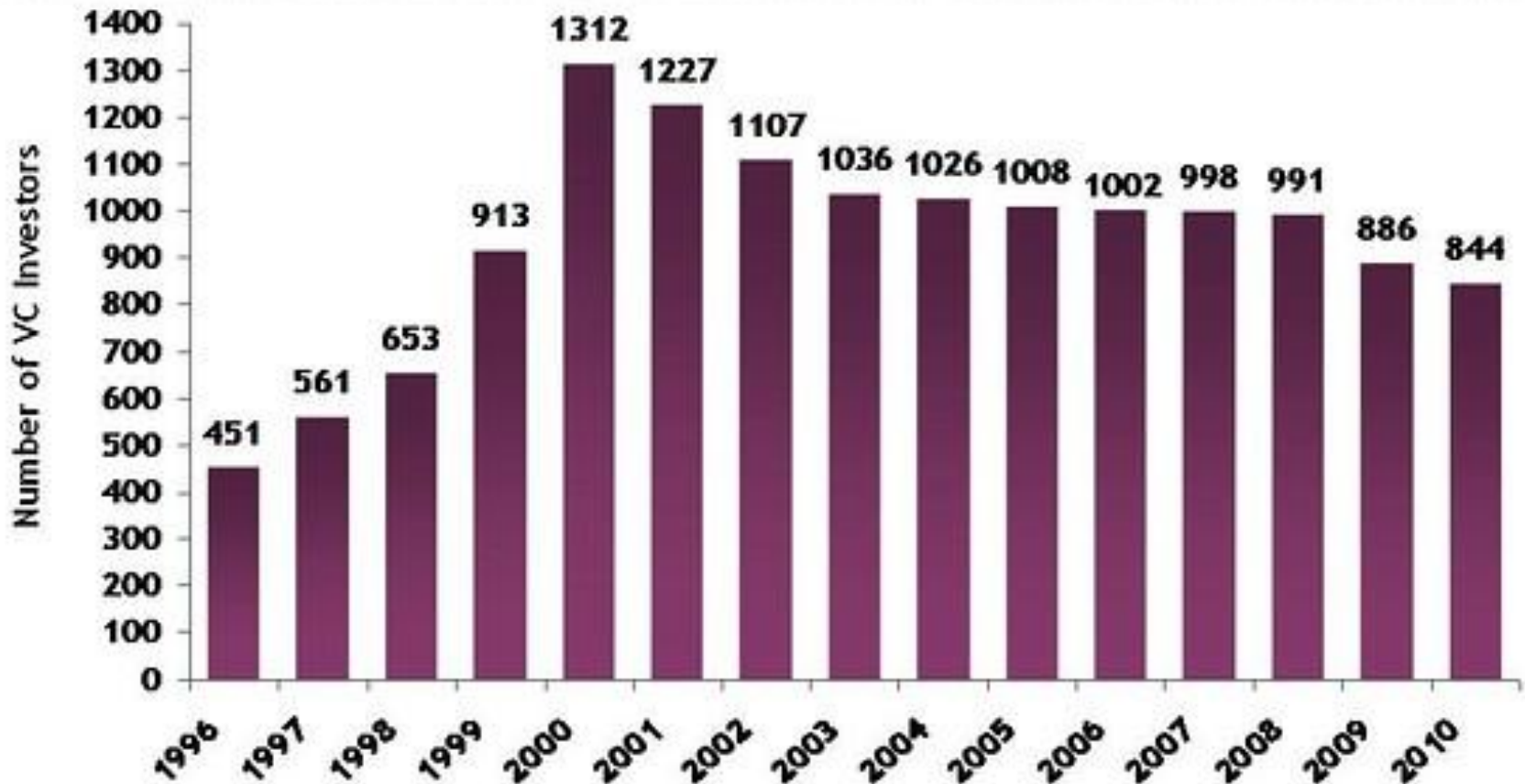


Source: ThomsonONE/Venture Economics

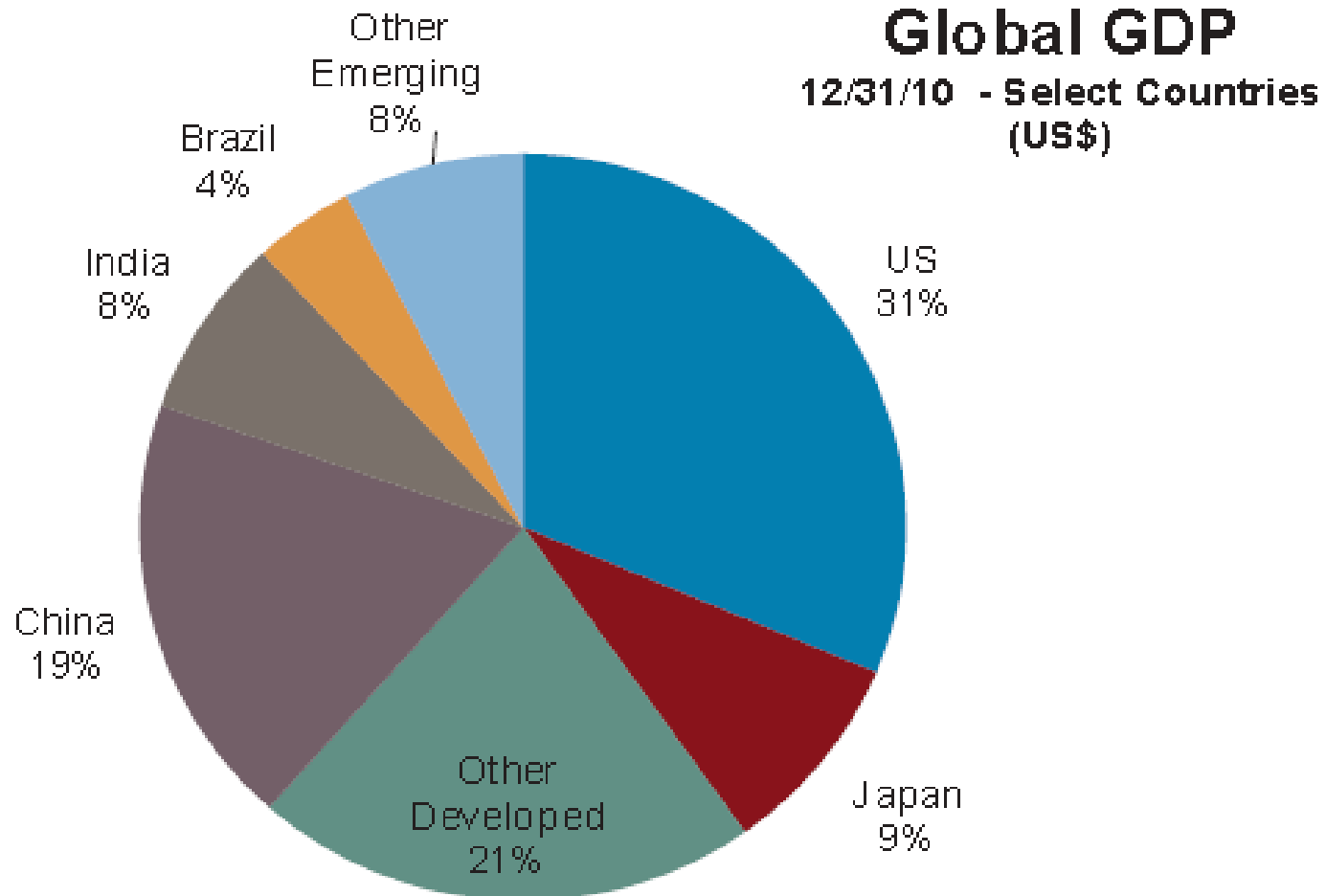
VC's have full portfolio's

Active Venture Capital Firms

Based on those firms that made at least one investment in a year

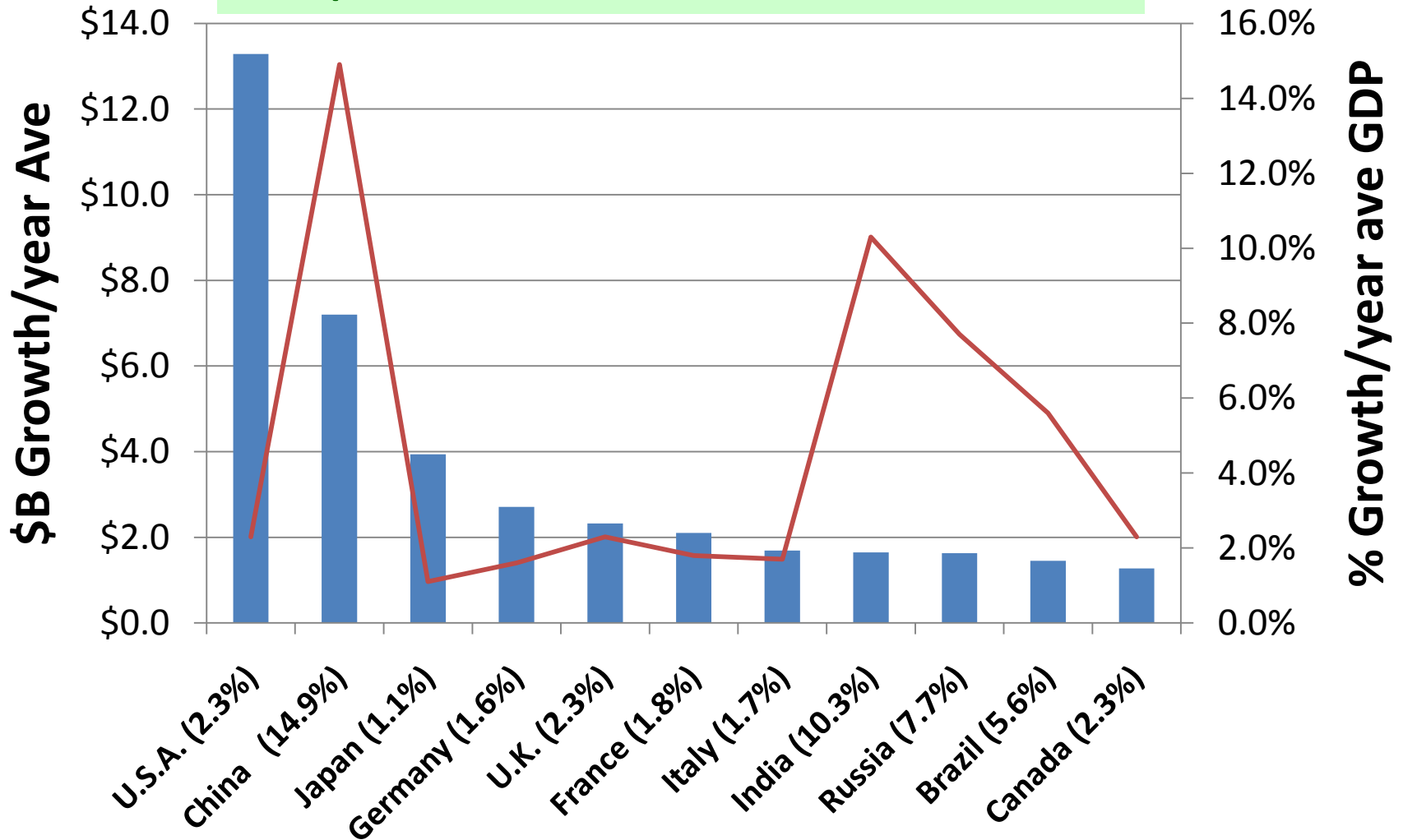


USA #1 GDP for long time



Source: JP Morgan Asset Management, Guide to the Markets, 1Q 2011

Top 10 Countries Growth 2010-2015 \$B and % GDP FCST YOY Ave



ASSESS ABILITY TO “ABSORB”

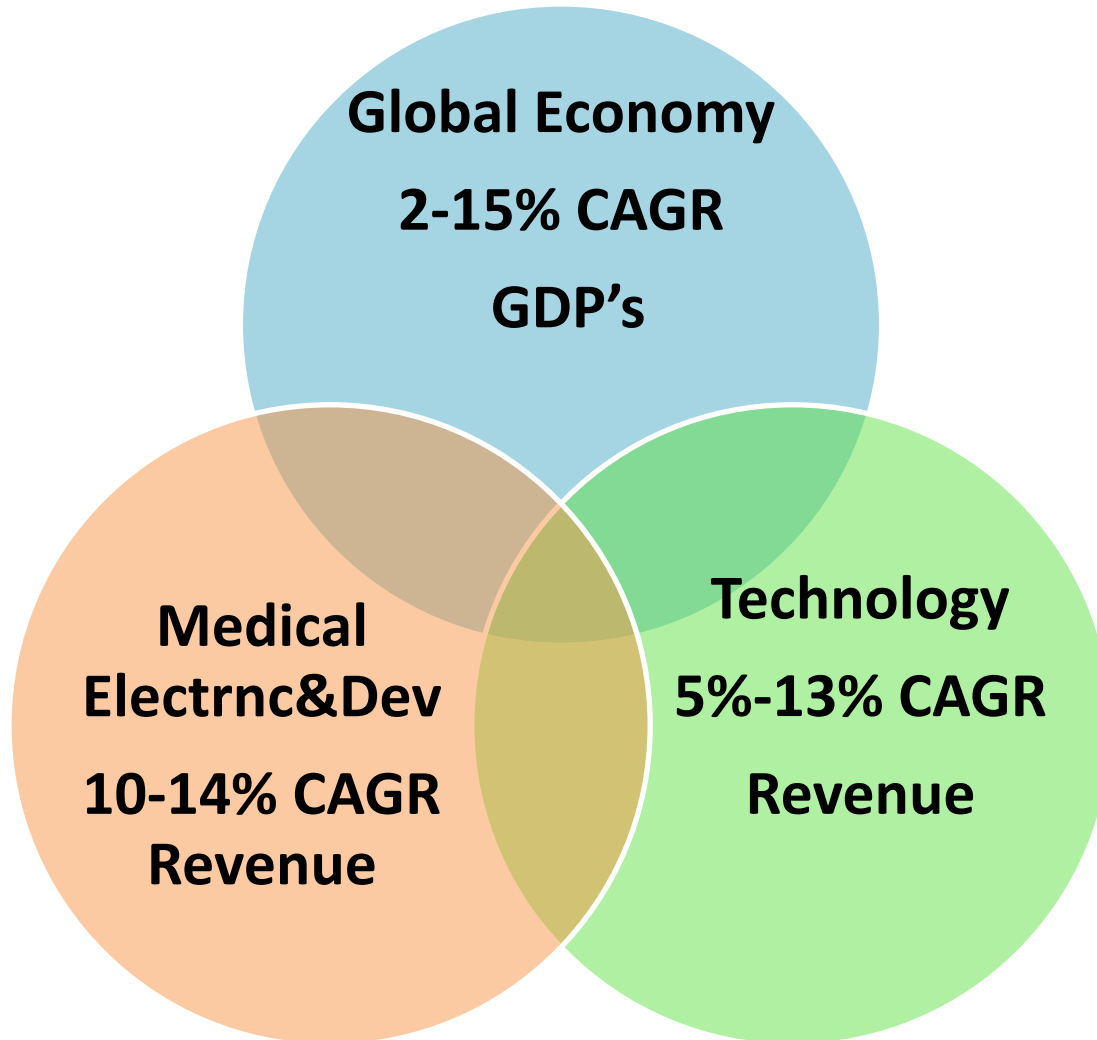
Consultants “navigation” tools...

- Look at Qtrly VC Investment List
- Give seminar/lunches at incubators
- Visit embassies and development offices
- Find a match, invest time to know client
- Invest more free consult up front
- Be culturally up-to-date
- Know what clients want versus need

Consultants “navigation” tools...

- What small companies want:
 - You to go with them
 - Introduction to customers
 - Introduction to investors
- What small companies need:
 - Viable business models
 - IP protection
 - Clear view of competition & hurdles

Great Opportunity 2010 – 2015 Forecast



5 Checkpoints for Find – Engage – Prosper

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Questions & Discussion