



Positioning Life Science Companies For Accurate Valuation & Strong Exit

Innovation, Commercialization, and Start-Ups in Life Sciences



James F. Jordan

Table of Contents

Part 1 – Innovation is a Process of Connected Steps

Chapter 1: Investment Uses a Translation Process to Deliver Innovation

Chapter 2: Investment is Critical to a Nation's Prosperity

Chapter 3: The Journey of Innovation Begins With Investment

Chapter 4: The U.S. Helps Small Companies Develop Technology

Chapter 5: Commercialization is Primarily Executed Through Two Organizational Types

Part 2 – Investment Must Be Connected to Exit

Chapter 6: Angels and Venture Capitalists Invest in Commercialization

Chapter 7: Create Liquidity For Your Investors

Chapter 8: A Liquidity Event is Not Consummated Without Due Diligence

Chapter 9: Due Diligence Reputation is a Critical Business Process

Part 3 – Align With the Industry Norms

Chapter 10: Find the Industry Norms

Chapter 11: Solve an Important Customer Problem

Chapter 12: Demonstrate the Ability to Access the Sales Channel

Chapter 13: Gather Domain-Experienced Personnel to Reduce Risk

Chapter 14: Determine Acquirers' Strategic Future and Purchase Triggers

Chapter 15: Align Investor's Fundable Milestones and Acquirer's Exit Points

Chapter 16: Create an IP Pyramid for Impervious Positioning

Part 4 – A Startup Must Tell a Compelling Story

Chapter 17: Address Your Story to the Needs of All Constituencies

Chapter 18: Deliver to Your Plan

Chapter 19: Tell a Compelling Story With the Investor Pitch

Chapter 20: Continuously Improve Your Message With the Plan-Do-Check-Act Cycle

Uncovering your Exit Triggers

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Aligning Objectives & Concerns

Customer = Investor = Acquirer

**A poorly planned and ill-provisioned
journey ↑ probability of failure**

**Navigational instruments ascertain
position & direction to a destination**

Waypoints are planned milestones to re-provision (\$) & capture value

**Planning & provisioning are
aided through the use of tools**

Objective: Provide Tools for Accurate Valuation & Strong Exit

1

Find **BENCHMARK**

- Evaluate by comparison

2

To uncover the **STANDARD**

- A measure, norm or model in comparative evaluation

3

Through use of **TOOLS**

- An implement to carry out a particular function

4

To obtain **KNOWLEDGE**

- Acquired understanding through facts, information or experience

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Uncover the standards by addressing constituency objectives & concerns

	Customer	Investor	Acquirer
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Concerns	<ul style="list-style-type: none"> • <u>Produce multi-year, accretive revenue stream</u> <ul style="list-style-type: none"> - Clinical trial participation - New procedures (aka robotics) • <u>Attain top-tier operating margins</u> <ul style="list-style-type: none"> - Multi-year agreements (formulary) - Reimbursement category PPV - Predictable horizontal/longitudinal costs - Sustainability of NewCo • <u>Capture regional market-share</u> <ul style="list-style-type: none"> - Technology guarantee - Clinical trial access 	<ul style="list-style-type: none"> • Portfolio balance & timing • Validation of business model • Validation of product category • Venture capital requirements • Inability to participate in later rounds • Implications of public financing 	<ul style="list-style-type: none"> • Aligned business models • Defend/expand existing categories • Enter new categories/markets • Formulary competitiveness • Maintain/improve financial ratios • Salesforce leverage

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The Acquirer

Objectives

- Price/Earning Ratio
- Revenue/margin accretion
- Market share

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Tools reveal standards so you can plot a winning strategy

- **Valuation Milestones:** A review of standard, not comparatives, avails and aligns valuation and fundable milestones with those of investors and acquirers
- **Disease State Fact Book:** Distinguish the difference between an incremental market improvement and a monumental innovation
- **Industry Life Cycle:** Incumbent's resist acquiring until their existing investment is threatened or expiring
- **Purchase Trigger Database:** Reliance on an early exit is misplaced if uninformed, know your acquirer's habits

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Let's look at an example

- Each life sciences vertical differs
 - Pharmaceutical
 - Diagnostics
 - Medical Devices
 - Healthcare IT
- Each product category may differ
 - Cardiovascular
 - Cancer
- Each regulatory category may differ
 - 510k
 - PMA

Data points from Venture Source & Pitchbook

Note:

- 2011 Venture Data Set for regional companies
- F = Fundable milestone – move to next class
- V = Value milestone – company value increases



Valuation standards define your waypoints

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Series A - in millions		
Pre-Money	Capital Raise	Post-Money
2.7	1.3 +/- 1	4 +/- 2



----- 11 months +/- 2.4 -----

Series B - in millions		
Pre-Money	Capital Raise	Post-Money
8.0	4 +/- 1.9	12 +/- 4.3

----- 14 months +/- 2.5 -----

Series C - in millions		
Pre-Money	Capital Raise	Post-Money
15.9	8.9 +/- 3.5	24.8 +/- 7.6

----- 15 months +/- 3.4 -----

- Create proof of concept (F/V)
- Commercialization plan viability (F/V)
- Buildout technical team (V)

- Attain regulatory pathway (V)
- 1st in-human data/ start clinical trial (F/V)
- Design System Audit (V)

- Commercial approval - OUS (V)
- Regulatory trial approval - US (F/V)
- Launch US trial (V)
- Hire sales & marketing team (V)

Series D - in millions		
Pre-Money	Capital Raise	Post-Money
32.1	11.6 +/- 5.9	43.7 +/- 15

----- 20 months +/- 8.7 -----

Series E - in millions		
Pre-Money	Capital Raise	Post-Money
62.0	16. +/- 5.9	78.3 +/- 24

- Regulatory approval - US (F/V)
- Launch US product (V)
- US Revenue in excess of \$xxM run-rate (F/V)
- Demonstrate viability of 2nd product (V)

- Demonstrate hockey-stick revenue growth (F/V)
- Pass cash-flow BE Point (F/V)
- Regulatory trial path 2nd product - US (V)

Exit Details		
Capital Raise	Exit Value	Months
54 +/- 15	107 +/- 43	72 +/- 21.6
Multiples	CAGR %	
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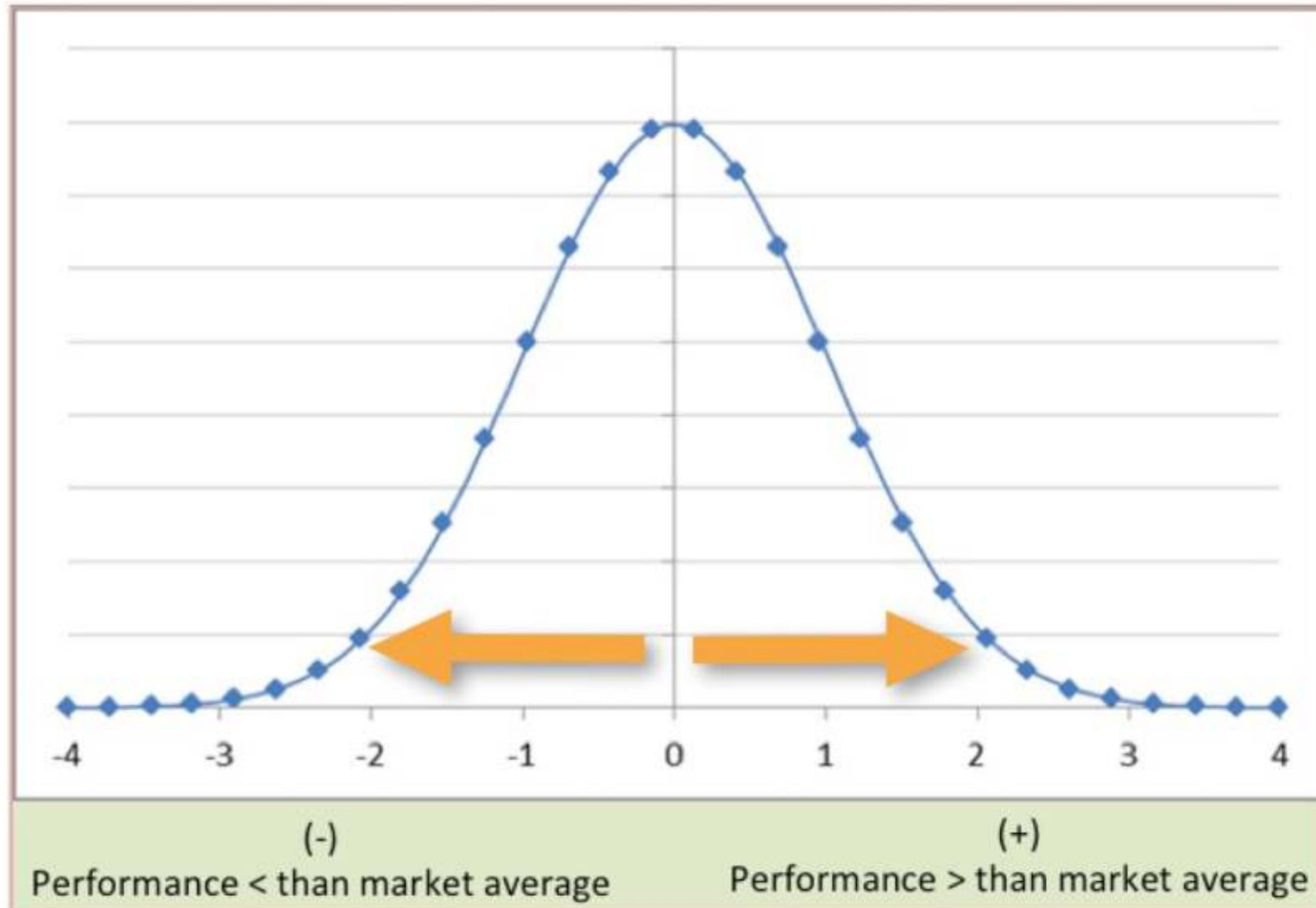
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Standard deviation is a measure used to quantify dispersion



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A value milestone increases company value

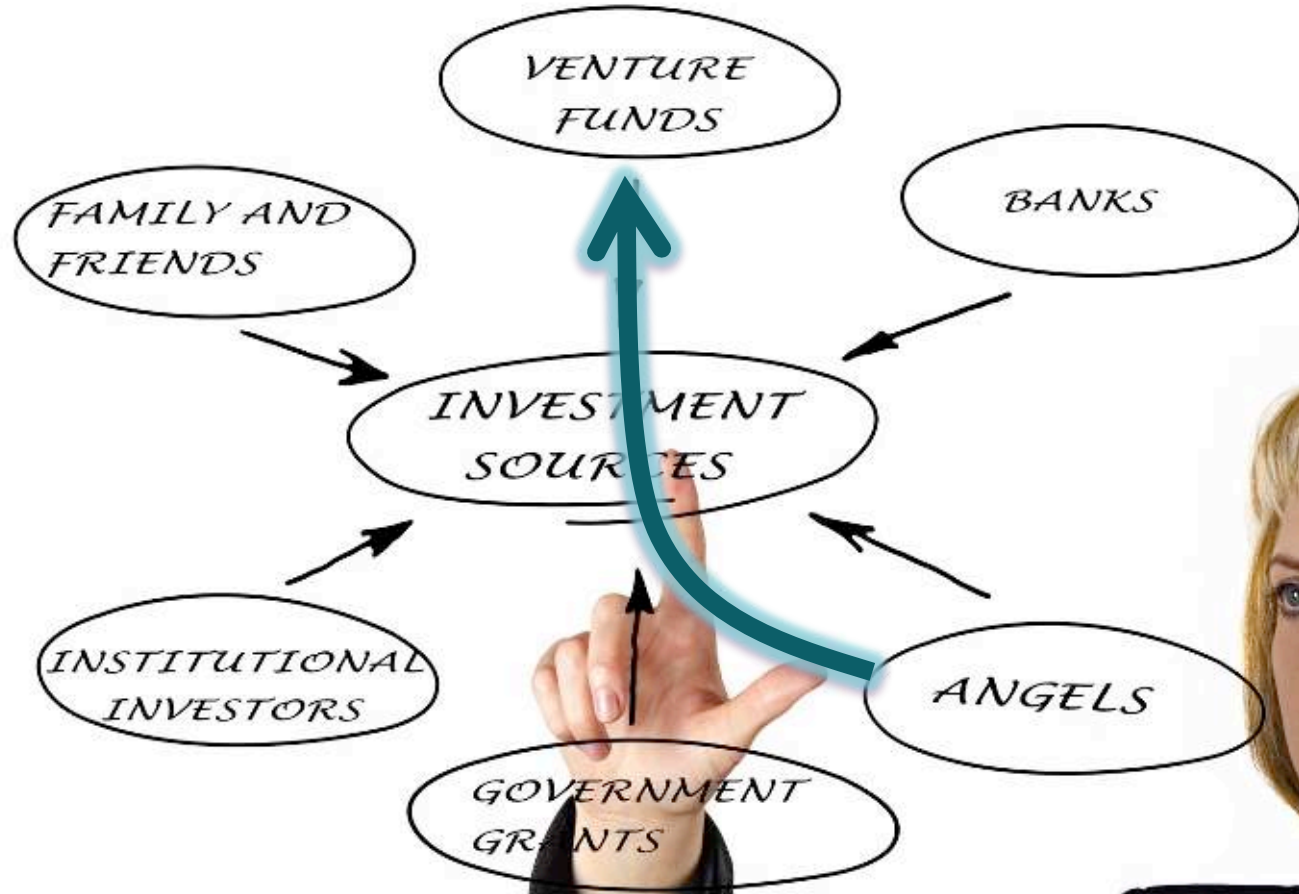
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A fundable milestone allows movement to next investor class

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Valuation standards define your waypoints (Medical Device)

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Early exits are not always practical

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- Regulatory trial path 2nd product - US (V)

Valuation standards define your waypoints

Note:

- 2011 Venture Data Set for regional companies
- F = Fundable milestone – move to next class
- V = Value milestone – company value increases

Series E - in millions		
Pre-Money	Capital Raise	Post-Money
62.0	16. +/- 5.9	78.3 +/- 24

Exit Details		
Capital Raise	Exit Value	Months
54 +/- 15	107 +/- 43	72 +/- 21.6
Multiples	CAGR %	
2.2 +/- 0.7	14.8 +/- 7.6	



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Valuation standards define your waypoints

Note:

- 2011 Venture Data Set for regional companies
- F = Fundable milestone – move to next class
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Exit Details		
Capital Raise	Exit Value	Months
54 +/- 15	107 +/- 43	72 +/- 21.6
Multiples	CAGR %	
2.2 +/- 0.7	14.8 +/- 7.6	



Valuation standards for a Therapeutic

Note:

- 2011 Venture Data Set for regional companies
- F = Fundable milestone – move to next class
- V = Value milestone – company value increases

Seed Round - in millions		
Pre-Money	Capital Raise	Post-Money
6.5 +/- 2.3	0.9 +/- 0.8	7.4 +/- 3.1

----- ~15 months -----

- Proof of concept with IND candidates
- Selection of clinically relevant animal model(s)

1st Round - in millions		
Pre-Money	Capital Raise	Post-Money
9.6 +/- 7	6.9 +/- 7.7	16.5 +/- 14.7

----- ~19 months -----

- Rodent and non-rodent toxicology
- Selection of IND enabling compound

2nd Round - in millions		
Pre-Money	Capital Raise	Post-Money
35.7	13.2 +/- 13.9	48.9 +/- 13.9

----- ~17 months -----

- Human safety (Phase I)

3rd Round - in millions		
Pre-Money	Capital Raise	Post-Money
50.0	17.3 +/- 17	67.3 +/- 17

----- ~13 months -----

- Efficacy studies in patients
- Patient dose range studies (Phase IIb)

4th Round - in millions		
Pre-Money	Capital Raise	Post-Money
148.3	29.8	178.1

- Phase III

Exit Details		
Capital Raise	Exit Value	Months
~70	~226.7	~60 - 84 months



Tools reveal industry standards so you can plot a winning strategy

- **Valuation Milestones:** A review of standard, not comparatives, avails and aligns valuation and fundable milestones with those of investors and acquirers
- **Disease State Fact Book:** Distinguish the difference between an incremental market improvement and a monumental innovation
- **Industry Life Cycle:** Incumbent's resist acquiring until their existing investment is threatened or expiring
- **Purchase Trigger Database:** Reliance on an early exit is misplaced if uninformed, know your acquirer's habits

Determine if a technology is an innovation or a modification

DISEASE STATE FACT BOOK

Row #			Base Year	Year 2				
1	Disease Prevalence	Portion of the population found to have the condition (1 in 1000)	24,652,555	25,268,869				
2	Incidence %	Percentage of new cases (generally a year)		20%				
3	Incidence	Occurrence of new cases since last time period later year or in a period of time (generally a year)		5,053,774				
4	Percentage Recurring	Percentage of population with a reoccurring event in a given year		20%				
5	Prevalance Population	[Disease prevalence less incidence] x percentage recurring		4,043,019				
6	Number Diagnosed	Number diagnosed patients (the act of identifying trateable disease)		9,096,793				
7	Diagnosis Rate %	Number diagnosed/disease prevalence (this included incident patients)		36.0%				
8	Procedural Approaches	Diagnostic, Medical Devices, Pharmaceutical, Long-term Care, Rehabilitation, etc.			Medical Therapy	CABG	Inteventional Procedure	
9	Procedure/Service Approach %	The percent of diagnosed cases that would use this product/service			84.5%	3.5%	12.3%	
10	Number of Procedures/Services	Number of diagnosed x procedure/service approach %			7,687,700	318,388	1,119,815	
11	Type of Products/Sub-services	List the individual products or services performed				Stent	Guide Catheter	Guide Wire
12	Units per Procedure/Service	Example: 2 Stents per Procedure, 30 pills per cycle, 30 days in long-term care				2.2	1.75	1.1
13	Market Units/Services	Number of Procedures x Units per Procedure/Service				2,463,593	1,959,677	1,231,797
14	Average Revenue per Event	Revenue value per event or service - note revenue by manufacturer would be different than at the hospital level				\$ 550.00	\$ 9.87	\$ 6.93
15	Market Dollars or Cost	Maket Units x Average Price				\$1,354,976,390	\$ 19,342,008	\$ 8,536,351

Factors that increase market value

1.	Disease Prevalence	Portion of the population found to have the condition (1 in 1000)
2.	Incidence %	Percentage of new cases (generally a year)
3.	Incidence	Occurrence of new cases since last time period — later year or in a period of time (generally a year)
4.	Percentage Recurring	Percentage of population with a recurring event in a given year.
5.	Prevalence Population	[Disease prevalence less incidence] x percentage recurring
6.	Number Diagnosed	Number diagnosed patients (the act of identifying treatable disease)
7.	Diagnosis Rate %	Number diagnosed/disease prevalence (includes incident patients)
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The factors that increase market value

DISEASE STATE FACT BOOK

Row #		Base Year	Year 2																											
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A 4% change in diagnosis rate can increase the market by 11%

DISEASE STATE FACT BOOK

Row #		Year 1			Year 2		
1	Disease Prevalence	25,268,869			25,268,869		
2	Incidence %	20%			20%		
3	Incidence	5,053,774			5,053,774		
4	Percentage Recurring	20%			25%		
5	Prevalance Population	4,043,019			5,053,774		
6	Number Diagnosed	9,096,793			10,107,548		
7	Diagnosis Rate %	36.0%			40.0%		
8	Procedural Approaches	Medical Therapy	CABG	Inteventional Procedure	Medical Therapy	CABG	Inteventional Procedure
9	Procedure/Service Approach %	84.5%	3.5%	12.3%	84.5%	3.5%	12.3%
10	Number of Procedures/Services	7,687,700	318,388	1,119,815	8,541,888	353,764	1,244,239
11	Type of Products/Sub-services			Stent Guide Catheter Guide Wire			Stent Guide Catheter Guide Wire
12	Units per Procedure/Service			2.2 1.75 1.1			2.2 1.75 1.1
13	Market Units/Services			2,463,593 1,959,677 1,231,797			2,737,326 2,177,418 1,368,663
14	Average Revenue per Event			\$ 550.00 \$ 9.87 \$ 6.93			\$ 550.00 \$ 9.87 \$ 6.93
15	Market Dollars or Cost			\$1,354,976,390 \$ 19,342,008 \$ 8,536,351			\$1,505,529,323 \$ 21,491,120 \$ 9,484,835
				1,382,854,750			1,536,505,277
				153,650,528			

A 1.2% procedural shift can change the market dollars by 10%

DISEASE STATE FACT BOOK

Row #		Year 1			Year 2		
1	Disease Prevalence	25,268,869			25,268,869		
2	Incidence %	20%			20%		
3	Incidence	5,053,774			5,053,774		
4	Percentage Recurring	20%			20%		
5	Prevalance Population	4,043,019			4,043,019		
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7	Diagnosis Rate %	36.0%			36.0%		
8	Procedural Approaches	Medical Therapy	CABG	Inteventional Procedure	Medical Therapy	CABG	Inteventional Procedure
9	Procedure/Service Approach %	84.5%	3.5%	12.3%	84.5%	2.0%	13.5%
10	Number of Procedures/Services	7,687,700	318,388	1,119,815	7,687,700	181,936	1,227,157
11	Type of Products/Sub-services			Stent Guide Catheter Guide Wire			Stent Guide Catheter Guide Wire
12	Units per Procedure/Service			2.2 1.75 1.1			2.2 1.75 1.1
13	Market Units/Services			2,463,593 1,959,677 1,231,797			2,699,746 2,147,525 1,349,873
14	Average Revenue per Event			\$ 550.00 \$ 9.87 \$ 6.93			\$ 550.00 \$ 9.87 \$ 6.93
15	Market Dollars or Cost			\$1,354,976,390 \$ 19,342,008 \$ 8,536,351			\$1,484,860,398 \$ 21,196,075 \$ 9,354,621

1,382,854,750

132,556,345

1,515,411,094

Market factors that attract acquirers

Factors that increase market value: (all tides rise boats)

- Diagnosis rate
- Procedure rate
- Units p/procedure

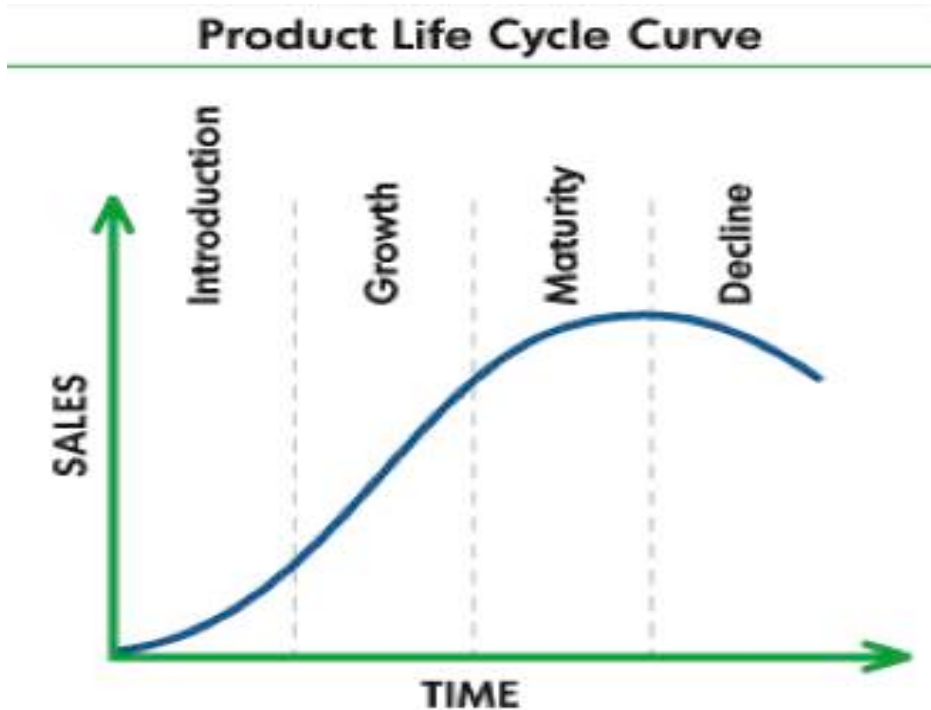
Factors that require taking share: (fighting incumbents)

- Type of products
 - Category transitions
- Market units
- Average selling price
- Market dollars

Tools reveal industry standards so you can plot a winning strategy

- **Valuation Milestones:** A review of standard, not comparatives, avails and aligns valuation and fundable milestones with those of investors and acquirers
- **Disease State Fact Book:** Distinguish the difference between an incremental market improvement and a monumental innovation
- **Industry Life Cycle:** Incumbents resist acquiring until their existing investment is threatened or expiring
- **Purchase Trigger Database:** Reliance on an early exit is misplaced if uninformed, know your acquirer's habits

Determine an industry's readiness



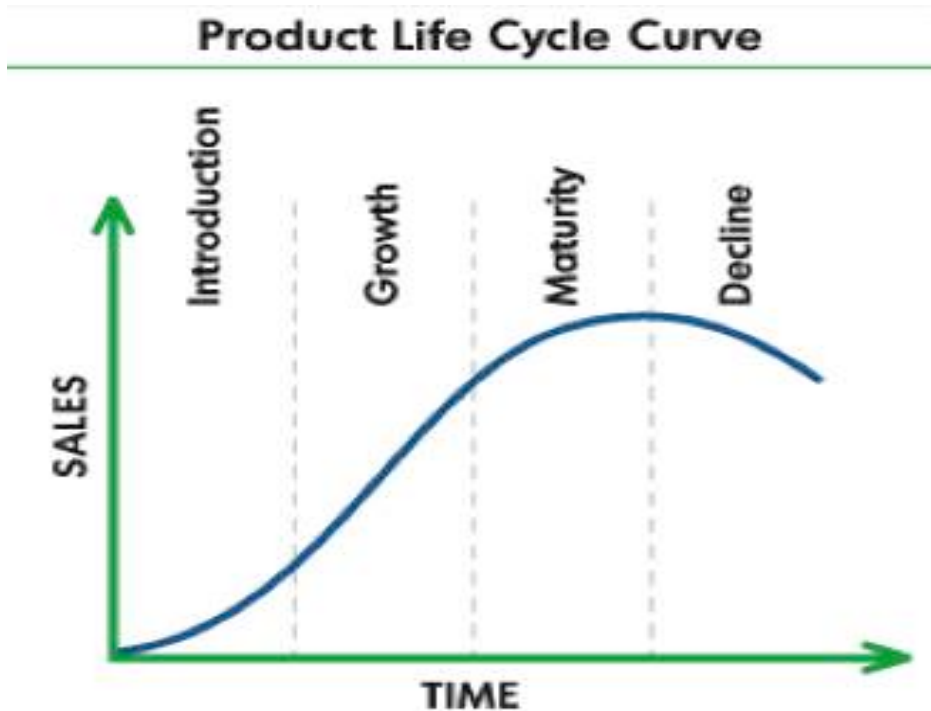
Macro Map

Micro Map

Abbott	
Atrium	✓
B Braun	
Baxter	
Boston Scientific	
CR Bard	
Cook	✓
Covidien	✓
Dräger	
Edwards	
GE Health care	
Gore Medical	✓
ILJ	
Konic concepts Inc.	
Medtronic	✓
Philips Health Care	
Siemens Health care	
Smith and Nephew	
Stryker	
St. Jude	✓
Synergetics	
Symovis	✓
Unomedical/Convotech	
Zimmer	

	angiography	angioplasty				IVUS	vascular closure	atherectomy	thrombectomy	cardiac catheter
		angioplasty balloon catheters		stents						
		bare metal	drug eluting	peripheral stents	coronary stents					
Abbott		✓	✓	✓	✓		✓	✓		
Abimed	✓									
Arrow Medical	✓	✓							✓	✓
Arterial Remodeling Technologies		✓								
Ashahi Intecc Co.	✓	✓								✓
Atrium	✓	✓	✓	✓	✓				✓	
B Braun	✓	✓								
Biosensors International		✓	✓	✓						✓
Biotronik		✓	✓	✓						
Boston Scientific	✓	✓	✓	✓	✓	✓		✓	✓	✓
CR Bard	✓	✓	✓	✓	✓			✓		✓
Cardiovascular Systems Inc.		✓	✓	✓	✓					✓
Cardiac output technologies		✓	✓	✓	✓					✓
Cardima										✓
Clear stream technologies		✓	✓	✓	✓					
Cook	✓	✓	✓	✓	✓			✓	✓	
Concentric Medical										
Covidien			✓	✓	✓			✓	✓	
Edwards Life Sciences	✓	✓								
Gore Medical					✓		✓			

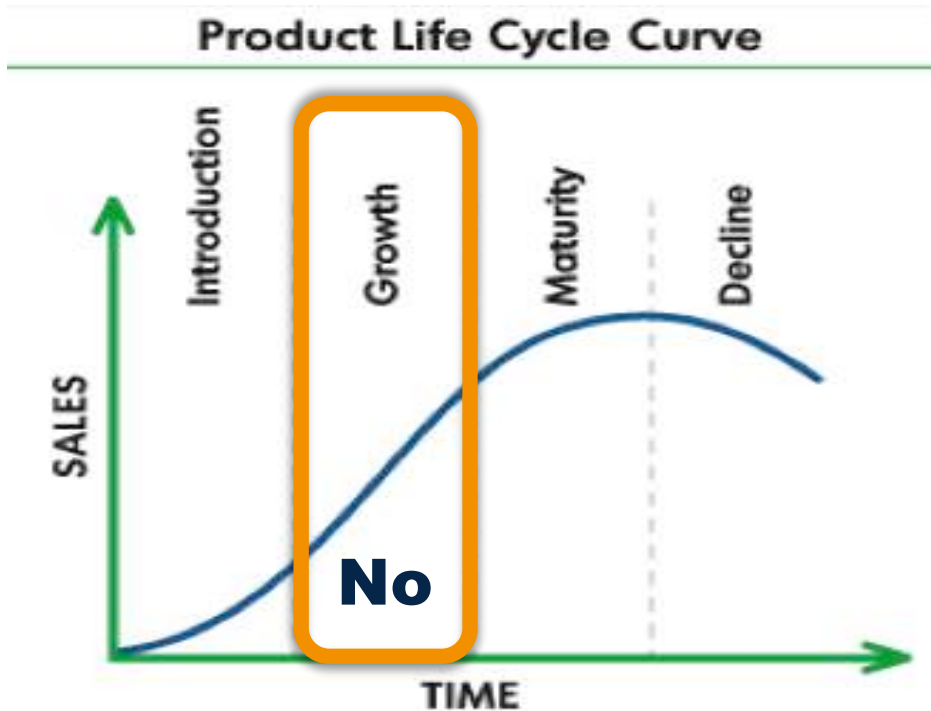
Determine an industry's readiness



Wang developed the CRT Word Processor
61% CAGR between 1979-1984



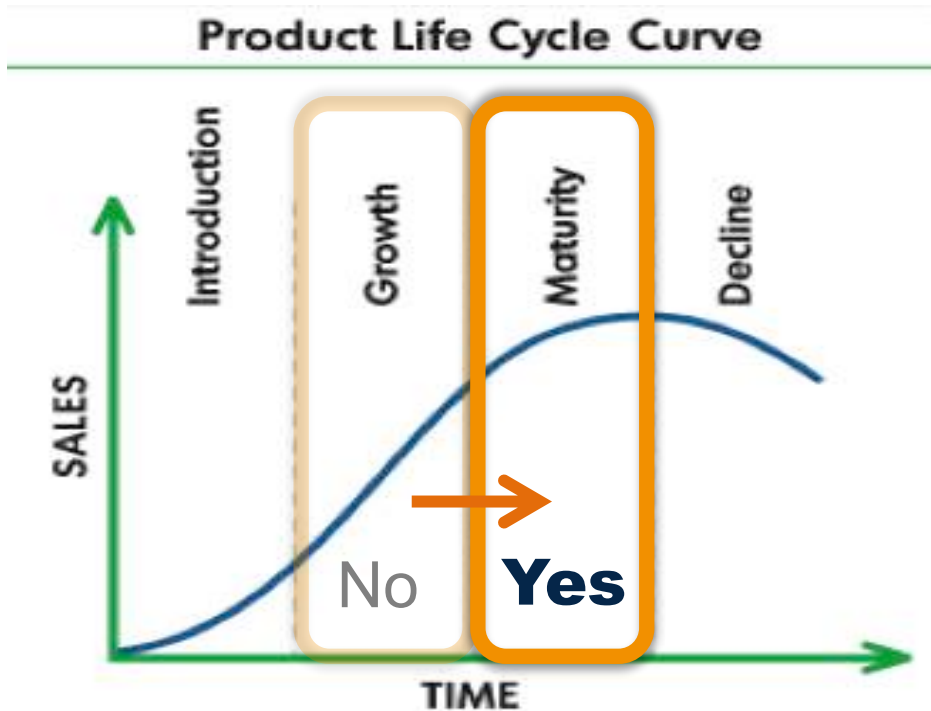
Industry & companies in a growth phase will fight a category shift



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Industry & companies in a growth phase will fight a category shift



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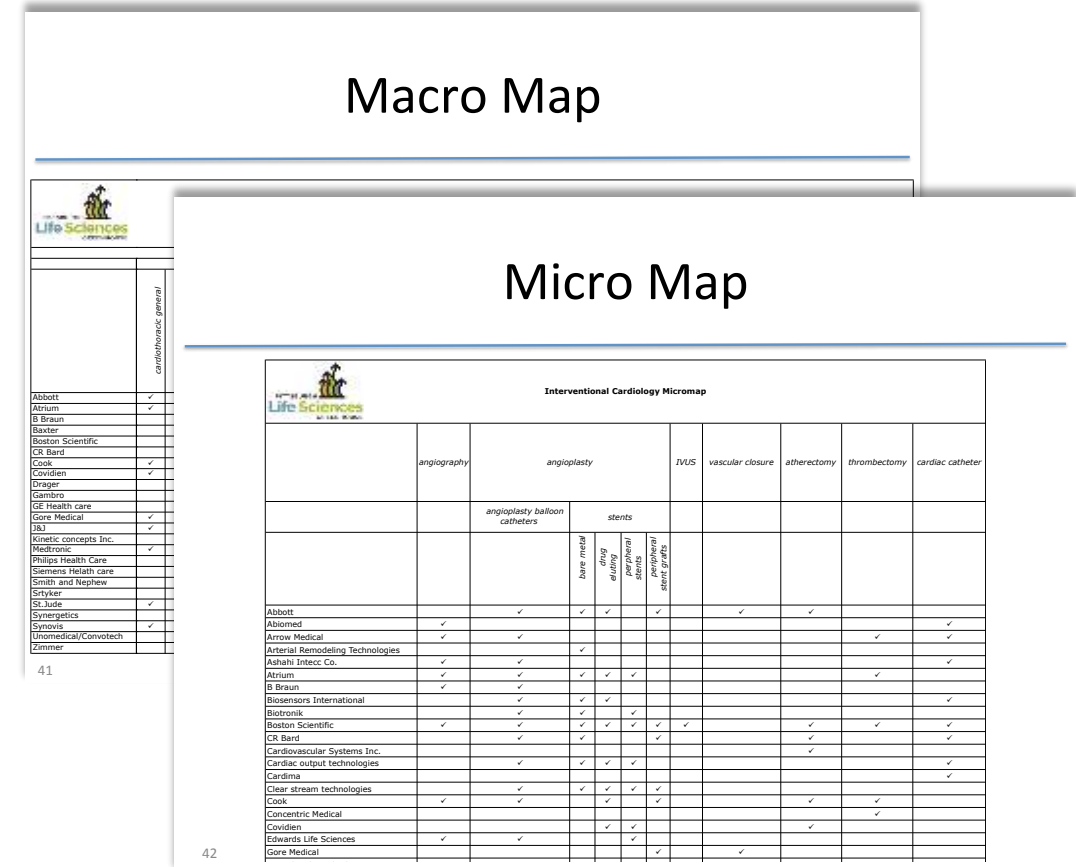
Macro/Micro maps help uncover industry readiness

Thermo Fischer Acquirers PPD for \$17.4 billion

Baxter Acquirers Hillrom for \$10.5 billion

Steris and Cantel Medical stock deal for \$4.6 billion

Boston Scientific acquires Baylis Medical for \$1.75 billion




Macro Map



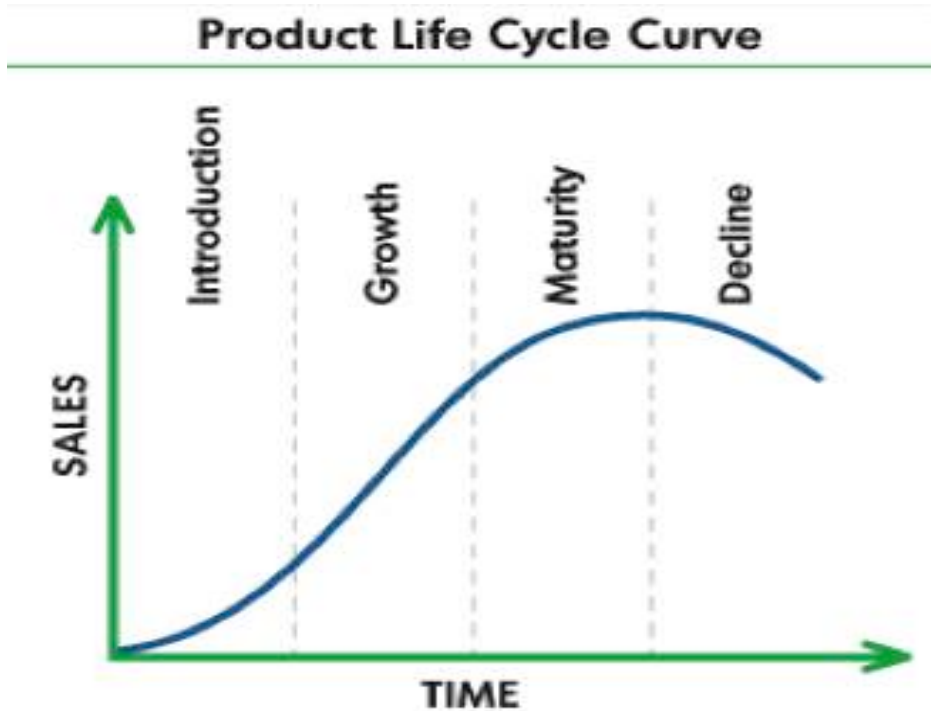
MEDICAL DEVICE INDUSTRY MACRO MAP

	HOSPITALS																																
	Operating Room										Multi speciality						ICU/CCU	Laboratory based			Specialty												
	cardiothoracic general	colon rectal	otolaryngiology	orthopedic	plastic surgery	ophthalmology	ob-gyn	general laproscopy	general-other	Vascular	urology	endoscopy	neurology	Robot assisted/image guided	anesthetics	respiratory devices	hemostats	tissue sealants	adhesion prevention	monitoring systems		Interventional cardiology	Interventional radiology	Electrophysiology	Interventional neurology	CRM	Radiology(imaging)	Renal	Neurology	Infusion systems	wound care and management		
Abbott	✓					✓			✓	✓												✓	✓								✓		
Atrium	✓							✓	✓	✓												✓	✓									✓	
B Braun										✓					✓							✓	✓					✓	✓	✓	✓		
Baxter															✓		✓	✓	✓									✓	✓	✓	✓		
Boston Scientific		✓				✓		✓			✓	✓	✓										✓	✓		✓					✓		
CR Bard			✓	✓				✓	✓	✓	✓						✓						✓	✓	✓		✓				✓		
Cook	✓	✓				✓		✓	✓	✓	✓												✓	✓						✓	✓		
Covidien	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓				✓		✓	✓			✓	✓		✓	✓	✓			✓	✓		
Drager															✓	✓					✓											✓	
Gambro																												✓					
GE Health care			✓			✓		✓			✓		✓		✓	✓					✓		✓	✓		✓	✓						
Gore Medical	✓	✓		✓				✓	✓	✓		✓											✓	✓								✓	
J&J	✓			✓	✓	✓	✓	✓	✓		✓	✓											✓	✓		✓	✓			✓	✓	✓	
Kinetic concepts Inc.						✓																										✓	
Medtronic	✓		✓	✓							✓											✓				✓			✓	✓		✓	
Philips Health Care															✓						✓						✓						
Siemens Helath care															✓	✓					✓		✓				✓						
Smith and Nephew				✓								✓									✓											✓	
Stryker				✓								✓	✓	✓							✓	✓								✓	✓		
St.Jude	✓	✓											✓										✓	✓		✓			✓				
Synergetics													✓																				
Synovis	✓				✓		✓	✓	✓	✓	✓	✓																					
Unomedical/Convotech																✓						✓								✓	✓		
Zimmer				✓																								✓					

Micro Map

 Interventional Cardiology Micromap										
	angiography	angioplasty				IVUS	vascular closure	atherectomy	thrombectomy	cardiac catheter
		angioplasty balloon catheters	stents							
			bare metal	drug eluting	peripheral stents	peripheral stent grafts				
Abbott		✓	✓	✓		✓		✓		
Abiomed	✓									✓
Arrow Medical	✓	✓							✓	✓
Arterial Remodeling Technologies			✓							
Ashahi Intecc Co.	✓	✓								✓
Atrium	✓	✓	✓	✓	✓				✓	
B Braun	✓	✓								
Biosensors International		✓	✓	✓						✓
Biotronik		✓	✓		✓					
Boston Scientific	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CR Bard		✓	✓			✓		✓		✓
Cardiovascular Systems Inc.								✓		
Cardiac output technologies		✓	✓	✓	✓					✓
Cardima										✓
Clear stream technologies		✓	✓	✓	✓	✓				
Cook	✓	✓		✓		✓		✓	✓	
Concentric Medical									✓	
Covidien				✓	✓			✓		
Edwards Life Sciences	✓	✓			✓					
Gore Medical						✓		✓		

Determine an industry's readiness



Macro Map

Micro Map

	cardiothoracic general
Abbott	
Atrium	✓
B Braun	
Baxter	
Boston Scientific	
CR Bard	
Cook	
Covidien	✓
Dräger	
Edwards	
GE Health care	
Gore Medical	✓
JK	
Konic concepts Inc.	
Medtronic	✓
Philips Health Care	
Siemens Health care	
Smith and Nephew	
Stryker	
St. Jude	✓
Synergetics	
Symovis	✓
Unomedical/Convotech	
Zimmer	

Interventional Cardiology Micromap

	angiography	angioplasty				IVUS	vascular closure	atherectomy	thrombectomy	cardiac catheter
		angioplasty balloon catheters		stents						
		bare metal	drug eluting	percutaneous	retrograde					
Abbott		✓	✓	✓	✓		✓	✓		✓
Abimed	✓									
Arrow Medical	✓	✓							✓	✓
Arterial Remodeling Technologies		✓								
Ashahi Intecc Co.	✓	✓								✓
Atrium	✓	✓	✓	✓	✓				✓	
B Braun	✓	✓								
Biosensors International		✓	✓	✓						✓
Biotronik		✓	✓	✓						
Boston Scientific	✓	✓	✓	✓	✓	✓		✓	✓	✓
CR Bard	✓	✓	✓	✓	✓			✓	✓	✓
Cardiovascular Systems Inc.		✓	✓	✓	✓					✓
Cardiac output technologies		✓	✓	✓	✓					✓
Cardima										✓
Clear stream technologies		✓	✓	✓	✓					
Cook	✓	✓	✓	✓	✓			✓	✓	
Concentric Medical										
Covidien			✓	✓	✓			✓	✓	
Edwards Life Sciences	✓	✓								
Gore Medical					✓		✓			

Tools reveal industry standards so you can plot a winning strategy

- **Valuation Milestones:** A review of standard, not comparatives, avails and aligns valuation and fundable milestones with those of investors and acquirers
- **Disease State Fact Book:** Distinguish the difference between an incremental market improvement and a monumental innovation
- **Industry Life Cycle:** Incumbent's resist acquiring until their existing investment is threatened or expiring
- **Purchase Trigger Database:** Reliance on an early exit is misplaced if uninformed, know your acquirer's habits

62% of PMAs are acquired after FDA approval

Note:

- 2011 Venture Data Set
- Sample size = 18
- Most likely less today before PMA

Series A - in millions		
Pre-Money	Capital Raise	Post-Money
2.7	1.3 +/- 1	4 +/- 2

|----- 11 months +/- 2.4 -----|

Series B - in millions		
Pre-Money	Capital Raise	Post-Money
8.0	4 +/- 1.9	12 +/- 4.3

|----- 14 months +/- 2.5 -----|

Series C - in millions		
Pre-Money	Capital Raise	Post-Money
15.9	8.9 +/- 3.5	24.8 +/- 7.6

|----- 15 months +/- 3.4 -----|

7 (38%) acquired before regulatory approval

Series D - in millions		
Pre-Money	Capital Raise	Post-Money
32.1	11.6 +/- 5.9	43.7 +/- 15

|----- 20 months +/- 8.7 -----|

Series E - in millions		
Pre-Money	Capital Raise	Post-Money
62.0	16. +/- 5.9	78.3 +/- 24

Exit Details		
Capital Raise	Exit Value	Months
54 +/- 15	107 +/- 43	72 +/- 21.6
Multiples	CAGR %	
2.2 +/- 0.7	14.8 +/- 7.6	

- Regulatory approval - US (F/V)

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A value proposition must address constituency objectives & concerns

- Identify constituency measures of success
- Valuation standards define your waypoints
- Distinguish innovation from improvement
- Determine an industry's readiness to change
- M&A history defines triggers (timing)



Questions?