

Positioning Life Science Companies for Accurate Valuation & Strong Exit



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Innovation, Commercialization, and Start-Ups in Life Sciences



James F. Jordan

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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

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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
Objectives	<ul style="list-style-type: none"> □ Outcomes = ↑Access + ↑Quality + ↓Cost 	<ul style="list-style-type: none"> □ IRR, ROI, Multiples □ Placement amount 	<ul style="list-style-type: none"> □ Price/Earning Ratio □ Revenue/margin accretion □ Market share
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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- 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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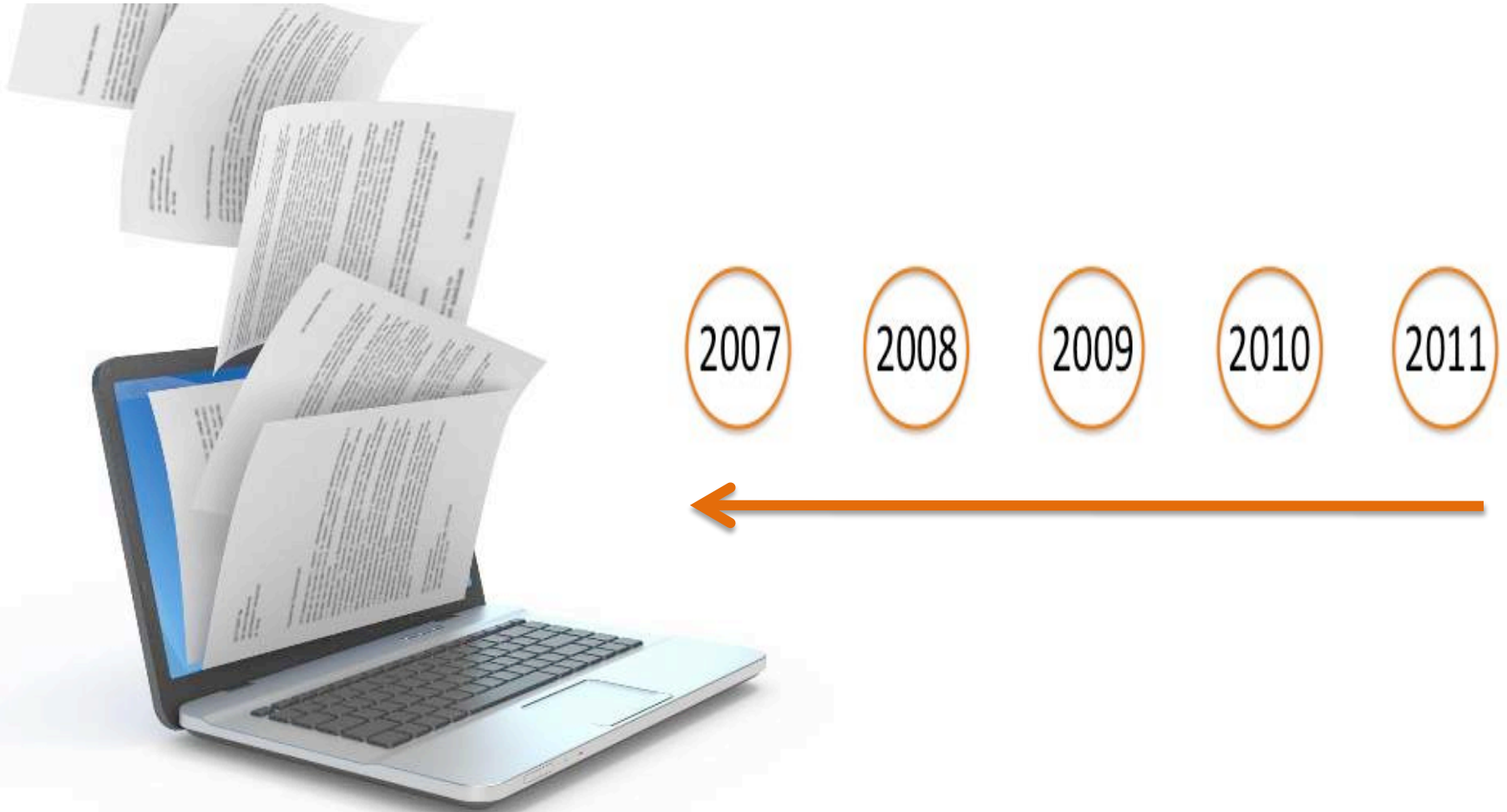
Let's look at an example

- Each life sciences vertical differs
 - Pharmaceutical
 - Medical Devices
 - Diagnostics
 - 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 ————|

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

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

|———— 14 months +/- 2.5 ————|

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

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

|———— 15 months +/- 3.4 ————|

- 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 ————|

- 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)

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

- 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 %
2.2 +/- 0.7		14.8 +/- 7.6

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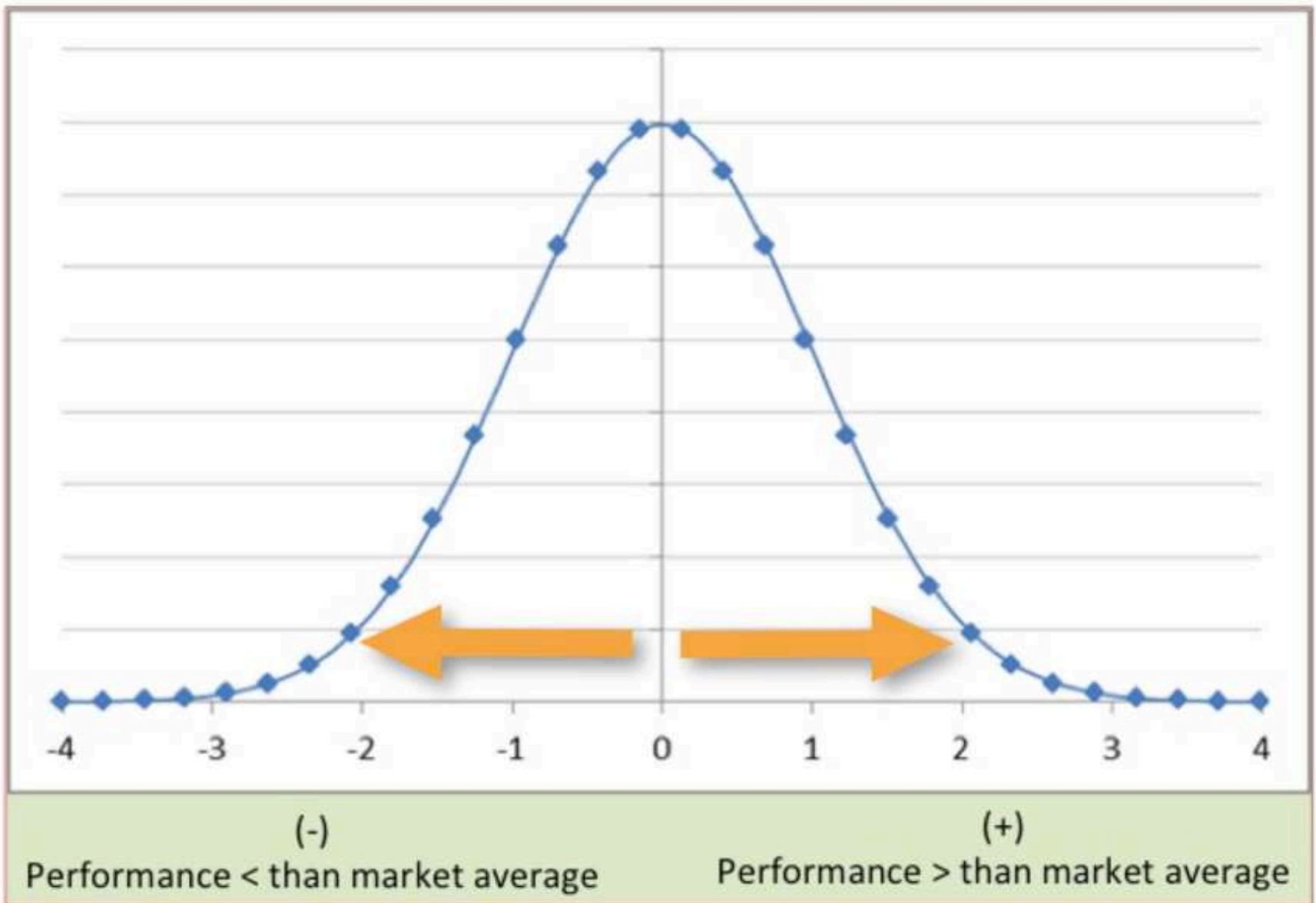
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Standard deviation is a measure used to quantify dispersion

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A value milestone increases company value

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

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A fundable milestone allows movement to next investor class

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

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Valuation standards define your waypoints (Medical Device)

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32.1	11.6 +/- 5.9	43.7 +/- 15

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

□ 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)

Early exits are not always practical

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	

□ Demonstrate hockey-stick revenue growth (F/V)

□ Pass cash-flow BE Point (F/V)

□ 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
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Series E - in millions

Pre-Money	Capital Raise	Post-Money
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Valuation standards define your waypoints

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- 2011 Venture Data Set for regional companies
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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	



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 —————|

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

|————— ~19 months —————|

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

|————— ~17 months —————|

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

- Rodent and non-rodent tox da
- Selection of IND enabling compound

- Human safety (Phase I)

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

|————— ~13 months —————|

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

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

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	Prevalence Population	[Disease prevalence less incidence] x percentage recurring		4,043,019			
6	Number Diagnosed	Number diagnosed patients (the act of identifying treatable 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	Market 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)
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The factors that increase market value

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Medical Therapy		CABG	Interventional Procedure		
84.5%		3.5%		12.3%	
7,687,700		318,388		1,119,815	
			Stent	Guide Catheter	Guide Wire
			2.2	1.75	1.1
			2,463,593	1,959,677	1,231,797
\$	550.00	\$	9.87	\$	6.93
\$1,354,976,390		\$	19,342,008	\$	8,536,351

A 4% change in diagnosis rate can increase the market by 11%

DISEASE STATE FACT BOOK

Row #		Year 2				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%			5%		25%	
5	Prevalance Population	4,043,019				5,053,774		
6	Number Diagnosed	9,096,793				10,107,548		
7	Diagnosis Rate %	36.0%			4%		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				

62

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

DISEASE STATE FACT BOOK

Row #	Year 2
1	Disease Prevalence
2	Incidence %
3	Incidence
4	Percentage Recurring
5	Prevalance Population
6	Number Diagnosed

7 Diagnosis Rate % 36.0%

Procedural Approaches	Medical Therapy	CABG	Inteventional Procedure
-----------------------	-----------------	------	-------------------------

9 Procedure/Service Approach % 84.5% 3.5% 12.3%

10 Number of Procedures/Services 7,687,700 318,388 1,119,815

Type of Products/Sub-services	Stent	Guide Catheter	Guide Wire
-------------------------------	-------	----------------	------------

12 Units per Procedure/Service 2.2 1.75 1.1

13 Market Units/Services 2,463,593 1,959,677 1,231,797

14 Average Revenue per Event \$ 550.00 \$ 9.87 \$ 6.93

15 Market Dollars or Cost \$1,354,976,390 \$ 19,342,008 \$ 8,536,351

1,382,854,750

Year 2
25,268,869
20%
5,053,774
20%
4,043,019
9,096,793

36.0%

Medical Therapy	CABG	Inteventional Procedure
-----------------	------	-------------------------

84.5% 2.0% 13.5%

7,687,700 181,936 1,227,157

Stent	Guide Catheter	Guide Wire
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2.2 1.75 1.1

2,699,746 2,147,525 1,349,873

\$ 550.00 \$ 9.87 \$ 6.93

\$1,484,860,398 \$ 21,196,075 \$ 9,354,621

1,515,411,094

132,556,345

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

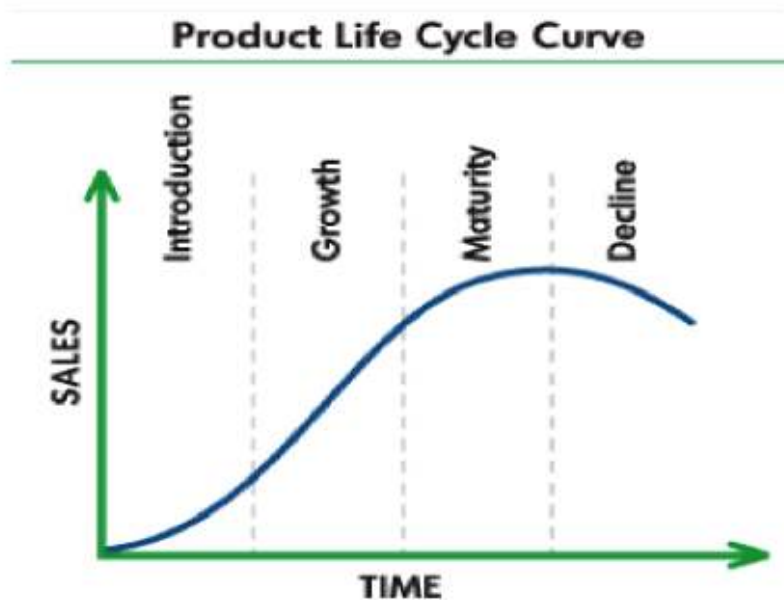
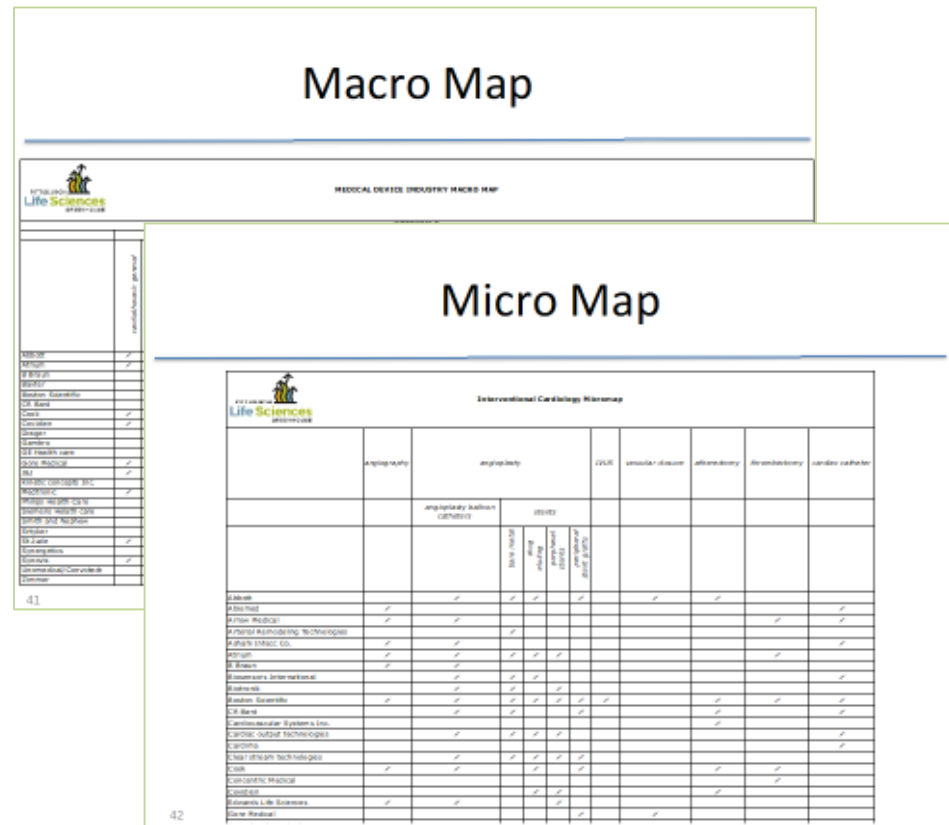


Figure 5.2 Product Life Cycle Management



Determine an industry's readiness

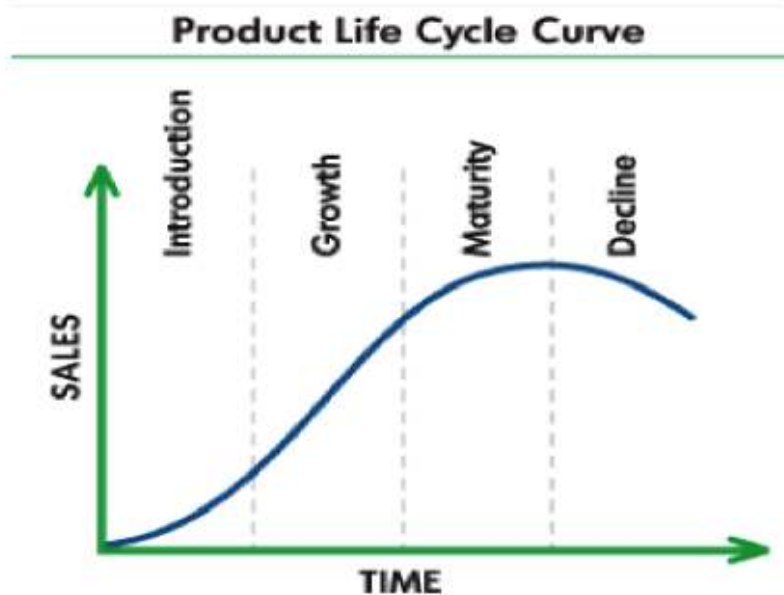


Figure 5.2 Product Life Cycle Management

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



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

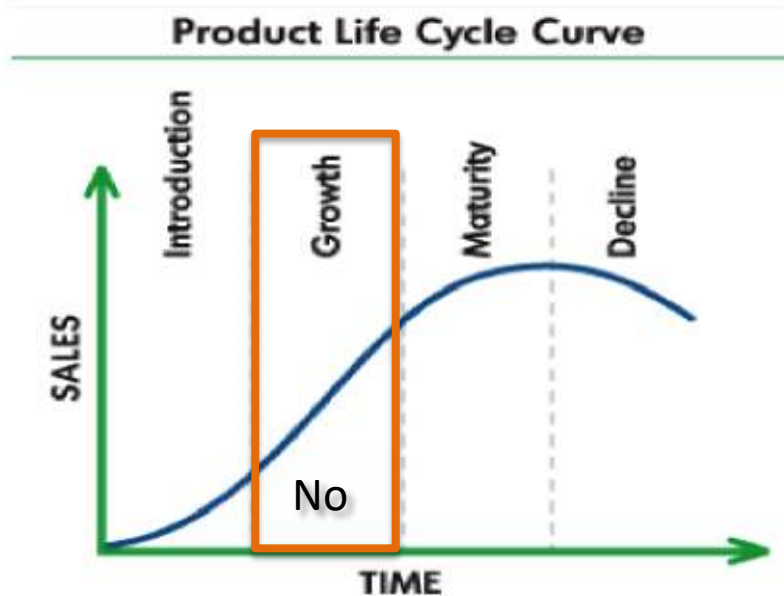


Figure 5.2 Product Life Cycle Management

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

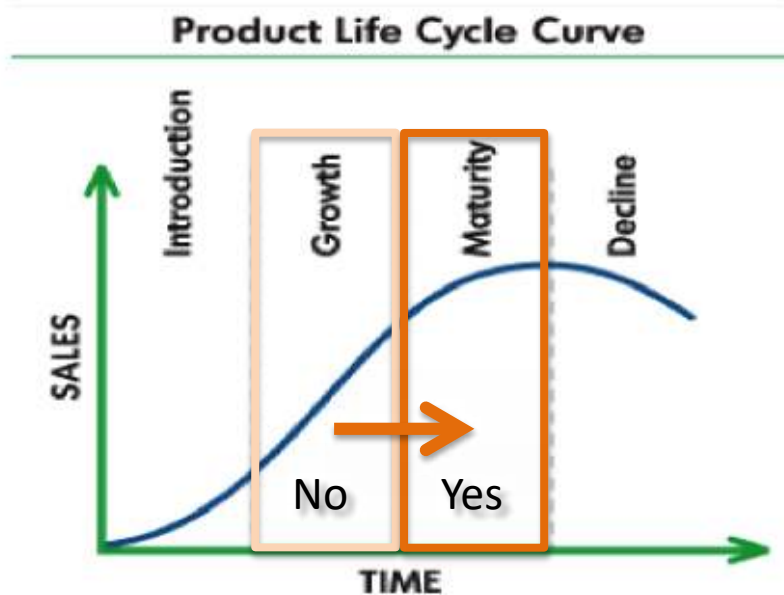


Figure 5.2 Product Life Cycle Management

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



Macro/Micro maps help uncover industry readiness

Zimmer-Biomet: The Deal That Shook Warsaw, Ind.

Merger, Valued at \$13.35 Billion, Combines Two Medical-Device Makers

Abbott Labs to Buy Private Medical Device Company Topera

Health-Care Company Also Secures Right to Acquire Advanced Cardiac Therapeutics


Johnson & Johnson to Seek Buyer for Cordis Medical-Device Unit

Division Could Fetch as Much as \$2 Billion in a Sale


Medtronic, Covidien Shareholders Approve Deal

Deal Is On Track To Close By The End Of January Or Early February

Macro Map


MEDICAL DEVICE INDUSTRY MACRO MAP

Micro Map


Interventional Cardiology Worksheet

	Angiography	Angioplasty	IVUS	Atherectomy	Stentless	Stentless	Stentless
Abbott							
Athera							
Athera Medical							
Athera Medical, Inc.							
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Macro Map




MEDICAL DEVICE INDUSTRY MACRO MAP

HOSPITALS

	Operating Room													Multi speciality					ICU/CCU	Laboratory based				Specialty							
	cardiothoracic general	colon rectal	otolaryngology	orthopedic	plastic surgery	ophthalmology	ob-gyn	general laparoscopy	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 Health care															✓	✓				✓		✓					✓				
Smith and Nephew				✓								✓																✓			
Stryker				✓								✓	✓	✓						✓	✓						✓			✓	
St.Jude	✓	✓												✓								✓		✓		✓			✓		
Synergetics													✓											✓					✓		
Synovis	✓				✓	✓	✓	✓	✓	✓		✓																			
Unomedical/Convotect																					✓		✓							✓	✓
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

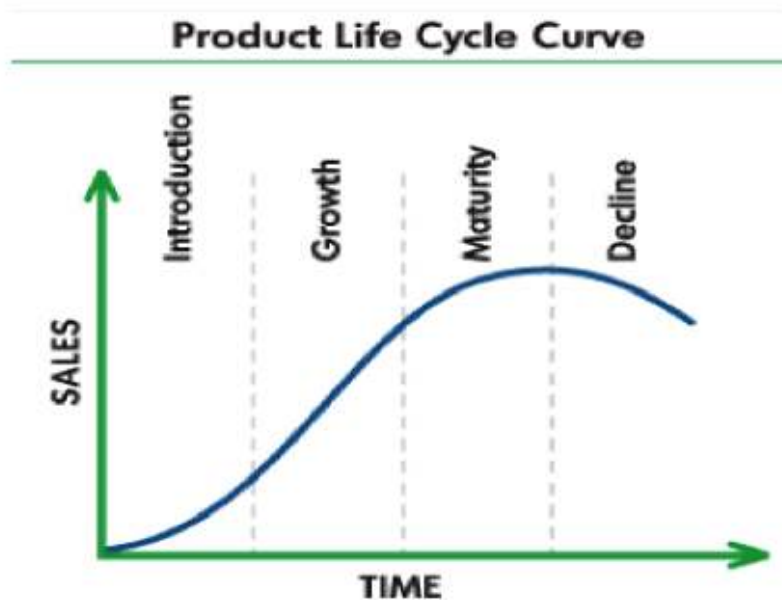
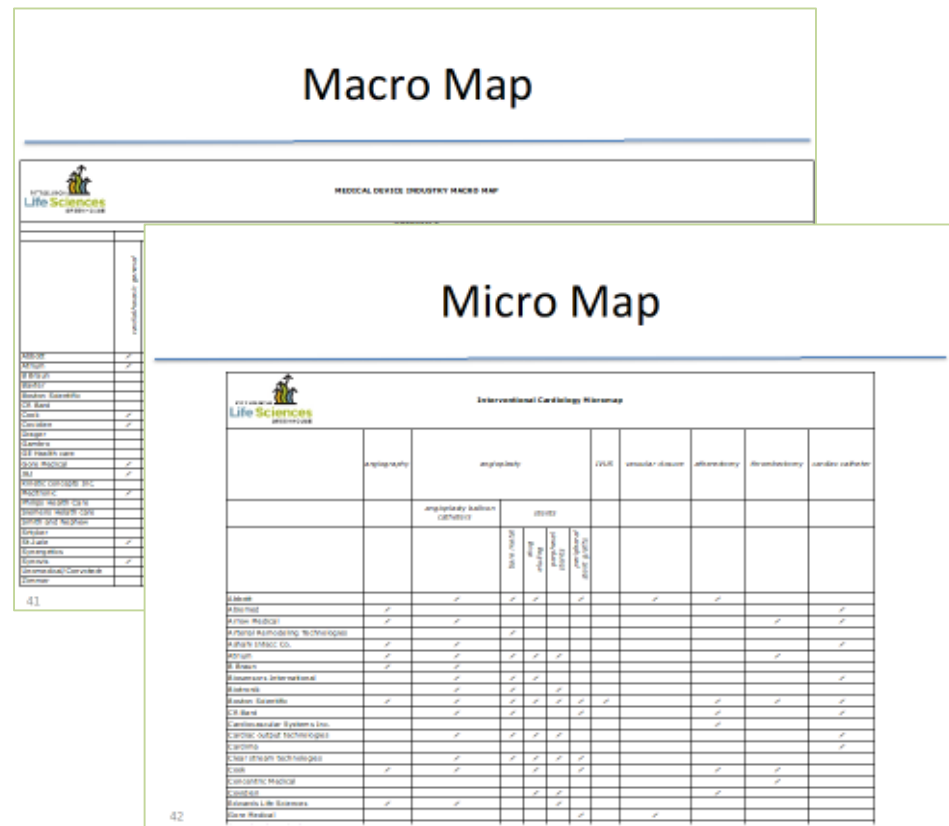


Figure 5.2 Product Life Cycle Management



Tools reveal industry standards so you can plot a winning strategy

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- 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 PMA's 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)

11 (62%) acquired after regulatory approval

62% of PMA's 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)

11 (62%) acquired after regulatory approval

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)