

Positioning Life Science Companies for Accurate Valuation & Strong Exit



CRC Press
Taylor & Francis Group

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

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

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

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

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

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

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

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

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

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

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

The healthcare payer/provider

Objectives

Outcomes = ↑Access + ↑Quality + ↓Cost

Concerns

- Produce multi-year, accretive revenue stream
 - Clinical trial participation
 - New procedures (aka robotics)
- Attain top-tier operating margins
 - Multi-year agreements (formulary)
 - Reimbursement category PPV
 - Predictable horizontal/longitudinal costs
 - Sustainability of NewCo
- Capture regional market-share
 - Technology guarantee
 - Clinical trial access

The healthcare payer/provider

Objectives

Outcomes = ↑Access + ↑Quality + ↓Cost

Concerns

- Produce multi-year, accretive revenue stream
 - Clinical trial participation
 - New procedures (aka robotics)
- Attain top-tier operating margins
 - Multi-year agreements (formulary)
 - Reimbursement category PPV
 - Predictable horizontal/longitudinal costs
 - Sustainability of NewCo
- Capture regional market-share
 - Technology guarantee
 - Clinical trial access

The healthcare payer/provider

Objectives

Outcomes = ↑Access + ↑Quality + ↓Cost

Concerns

□ Produce multi-year, accretive revenue stream

- Clinical trial participation
- New procedures (aka robotics)

□ Attain top-tier operating margins

- Multi-year agreements (formulary)
- Reimbursement category PPV
- Predictable horizontal/longitudinal costs
- Sustainability of NewCo

□ Capture regional market-share

- Technology guarantee
- Clinical trial access

The healthcare payer/provider

Objectives

Outcomes = ↑Access + ↑Quality + ↓Cost

Concerns

- Produce multi-year, accretive revenue stream
 - Clinical trial participation
 - New procedures (aka robotics)
- Attain top-tier operating margins
 - Multi-year agreements (formulary)
 - Reimbursement category PPV
 - Predictable horizontal/longitudinal costs
 - Sustainability of NewCo
- Capture regional market-share
 - Technology guarantee
 - Clinical trial access

The healthcare payer/provider

Objectives

Outcomes = ↑Access + ↑Quality + ↓Cost

Concerns

- Produce multi-year, accretive revenue stream
 - Clinical trial participation
 - New procedures (aka robotics)
- Attain top-tier operating margins
 - Multi-year agreements (formulary)
 - Reimbursement category PPV
 - Predictable horizontal/longitudinal costs
 - Sustainability of NewCo
- Capture regional market-share
 - Technology guarantee
 - Clinical trial access

The investor

Objectives

- IRR, ROI, Multiples
- Placement amount

Concerns

- Portfolio balance & timing
- Validation of business model
- Validation of product category
- Venture capital requirements
- Inability to participate in later rounds
- Implications of public financing

The investor

Objectives

- IRR, ROI, Multiples
- Placement amount

Concerns

- Portfolio balance & timing
- Validation of business model
- Validation of product category
- Venture capital requirements
- Inability to participate in later rounds
- Implications of public financing

The investor

Objectives

- IRR, ROI, Multiples
- Placement amount

Concerns

- Portfolio balance & timing
- Validation of business model
- Validation of product category
- Venture capital requirements
- Inability to participate in later rounds
- Implications of public financing

The investor

Objectives

- IRR, ROI, Multiples
- Placement amount

Concerns

- Portfolio balance & timing
- Validation of business model
- Validation of product category
- Venture capital requirements
- Inability to participate in later rounds
- Implications of public financing

The investor

Objectives

- IRR, ROI, Multiples
- Placement amount

Concerns

- Portfolio balance & timing
- Validation of business model
- Validation of product category
- Venture capital requirements
- Inability to participate in later rounds
- Implications of public financing

The acquirer

Objectives

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

Concerns

- Aligned business models
- Defend/expand existing categories
- Enter new categories/markets
- Formulary competitiveness
- Maintain/improve financial ratios
- Salesforce leverage

The acquirer

Objectives

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

Concerns

- Aligned business models
- Defend/expand existing categories
- Enter new categories/markets
- Formulary competitiveness
- Maintain/improve financial ratios
- Salesforce leverage

The acquirer

Objectives

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

Concerns

- Aligned business models
- Defend/expand existing categories
- Enter new categories/markets
- Formulary competitiveness
- Maintain/improve financial ratios
- Salesforce leverage

The acquirer

Objectives

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

Concerns

- Aligned business models
- Defend/expand existing categories
- Enter new categories/markets
- Formulary competitiveness
- Maintain/improve financial ratios
- Salesforce leverage

The acquirer

Objectives

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

Concerns

- Aligned business models
- Defend/expand existing categories
- Enter new categories/markets
- Formulary competitiveness
- Maintain/improve financial ratios
- Salesforce leverage

The acquirer

Objectives

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

Concerns

- Aligned business models
- Defend/expand existing categories
- Enter new categories/markets
- Formulary competitiveness
- Maintain/improve financial ratios
- Salesforce leverage

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

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

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

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

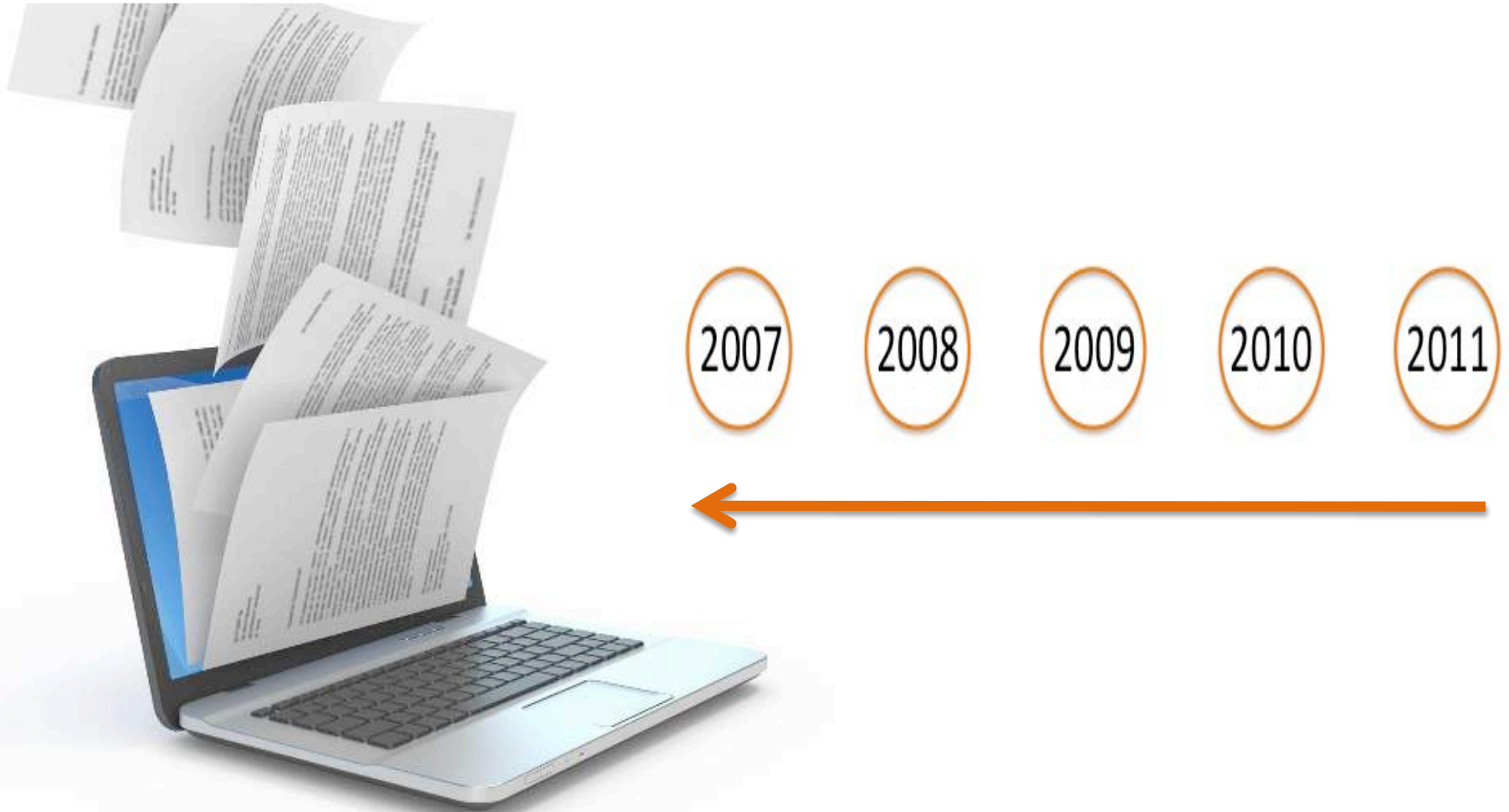
Let's look at an example

- 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

Note:

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

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

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 A - in millions		
Pre-Money	Capital Raise	Post-Money
2.7	4.3 +/- 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

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 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

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 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

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 A - in millions

Pre-Money	Capital Raise	Post-Money
2.7	1.3 +/- 1	4 +/- 2

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

□ Creat proof of concept (F/V)

□ Commercialization plan vaibility (F/V)

□ Buildout technical team (V)

Series B - in millions

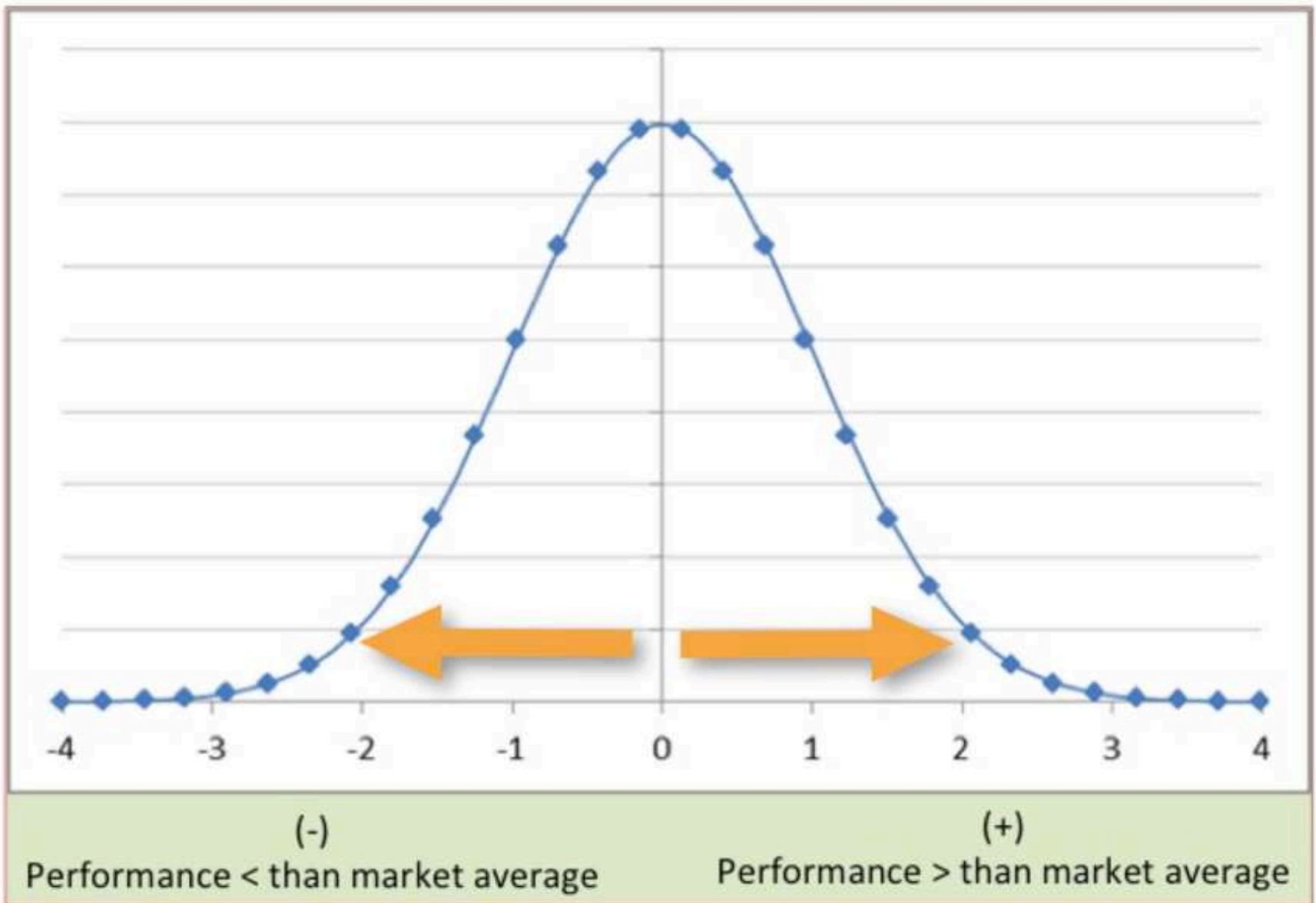
Pre-Money	Capital Raise	Post-Money
8.0	4 +/- 1.9	12 +/- 4.3

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

□ Attain regulatory pathway (V)

□ 1st in-human data/ start clinical trial (F/V)

□ Design System Audit (V)



Standard deviation is a measure used to quantify dispersion

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 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 -----|

□ Creat proof of concept (F/V)

□ Commercialization plan vaibility (F/V)

□ Buildout technical team (V)

□ Attain regulatory pathway (V)

□ 1st in-human data/ start clinical trial (F/V)

□ Design System Audit (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

A value milestone increases company value

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

□ Creat proof of concept (F/V)

□ Commercialization plan vaibility (F/V)

□ Buildout technical team (V)

A fundable milestone allows movement to next investor class

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

□ Attain regulatory pathway (V)

□ 1st in-human data/ start clinical trial (F/V)

□ Design System Audit (V)



Valuation standards define your waypoints (Medical Device)

Note:

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

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)

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
- 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	



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	



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	



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	



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	



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

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

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	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		Interventional 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)
7.	Diagnosis Rate %	Number diagnosed/disease prevalence (includes incident patients)
8.	Procedural Approaches	Diagnostic, Medical Devices, Pharmaceutical, Long-Term Care, Rehabilitation, etc.
9.	Procedure/Service Approach %	The percentage of diagnosed cases that would use this product/service
10.	Number of Procedures/Services	Number of diagnosed x procedure/service approach %
11.	Type of products/Sub-services	List the individual products or services performed
12.	Units per Procedure/Service	Example: 2 stents per procedure, 30 pills per cycle, 30 days in long-term care
13.	Market Units/Services	Number of Procedures x Units per Procedure/Service
14.	Average Revenue per Event	Revenue value per event or service – note revenue by manufacturer would be different than at the hospital level
15.	Market Dollars or Cost	Market Units x Average Price

The factors that increase market value

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	Interventional Procedure
9	Procedure/Service Approach %	The percent of diagnosed cases that would use this product/service	84.5%	12.3%
10	Number of Procedures/Services	Number of diagnosed x procedure/service approach %	7,687,700	1,119,815
11	Type of Products/Sub-services	List the individual products or services performed		
12	Units per Procedure/Service	Example: 2 Stents per Procedure, 30 pills per cycle, 30 days in long-term care		
13	Market Units/Services	Number of Procedures x Units per Procedure/Service		
14	Average Revenue per Event	Revenue value per event or service - note revenue by manufacturer would be different than at the hospital level		
15	Market Dollars or Cost	Market Units x Average Price		

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
\$	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				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		
6	Number Diagnosed	9,096,793				9,096,793		
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							
12	Units per Procedure/Service							
13	Market Units/Services							
14	Average Revenue per Event							
15	Market Dollars or Cost							

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

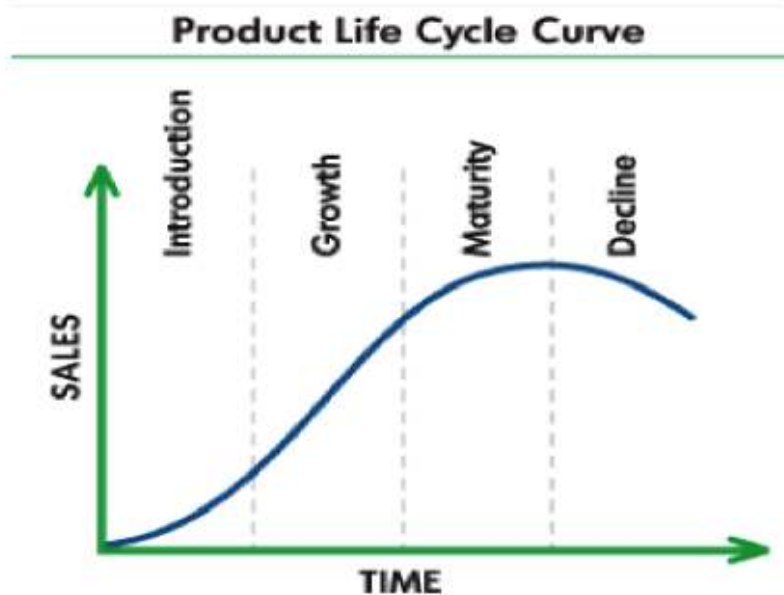


Figure 5.2 Product Life Cycle Management

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



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

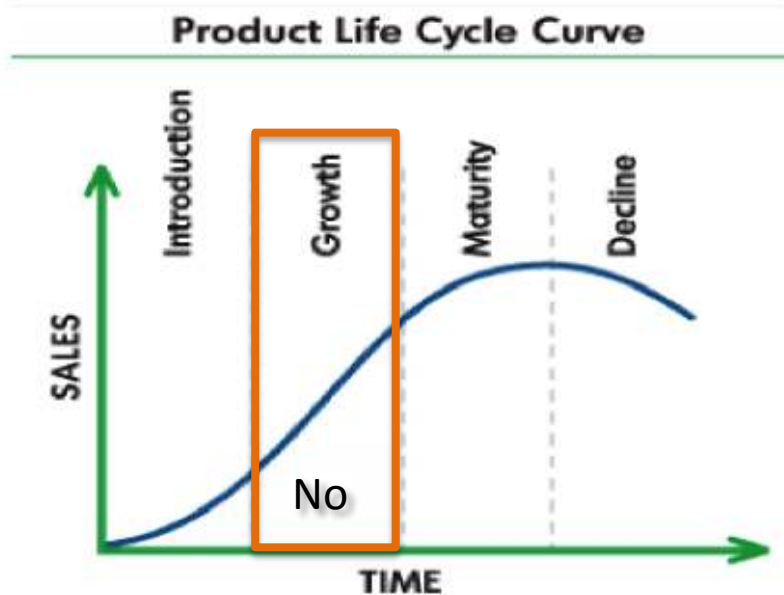


Figure 5.2 Product Life Cycle Management

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



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

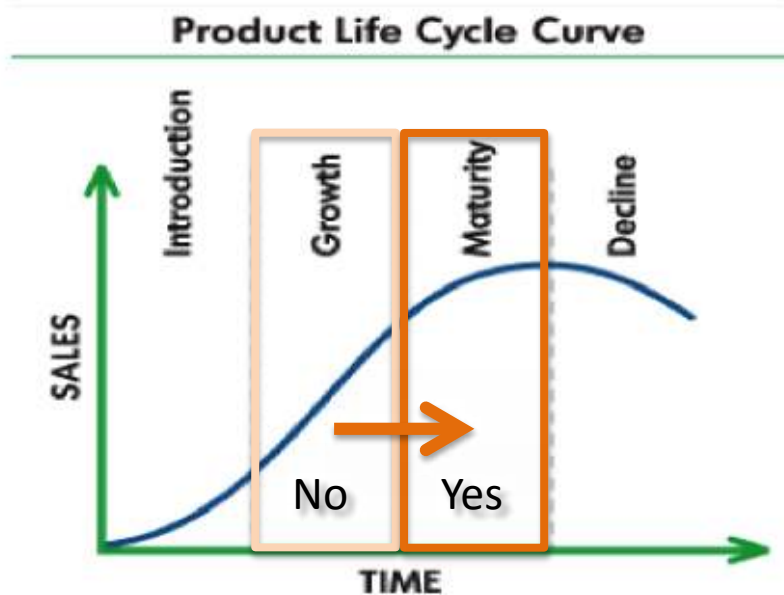


Figure 5.2 Product Life Cycle Management

- 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

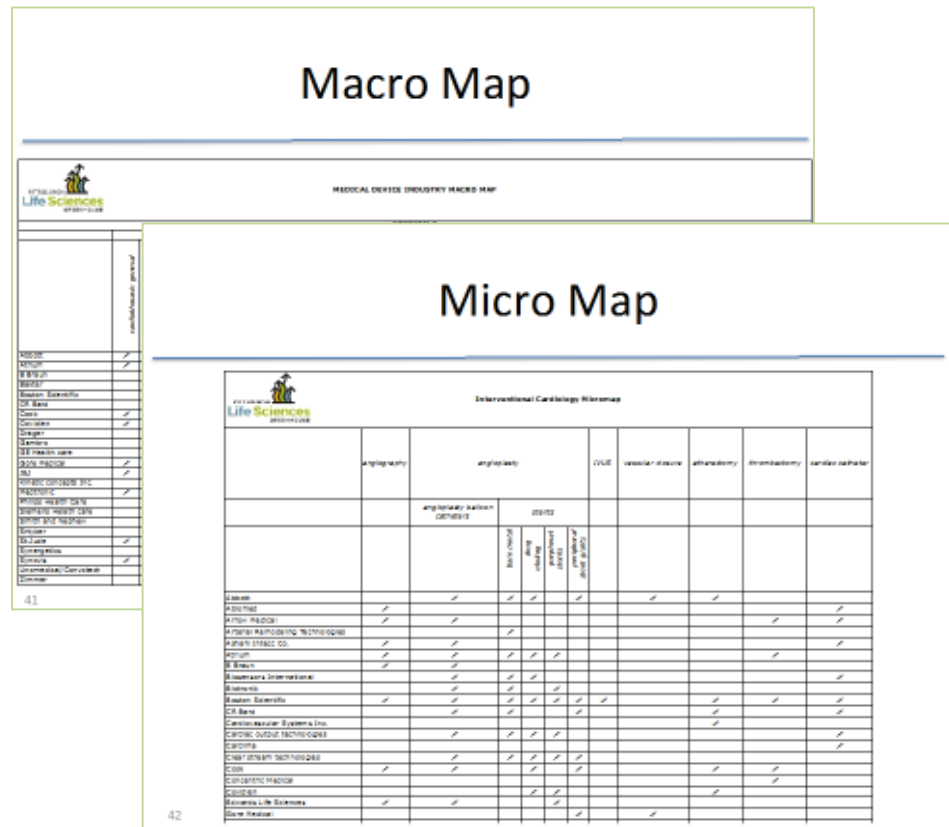
Health-Care Company Also Secures Right to Acquire Advanced Cardiac Therapeutics

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

	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	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓			✓		✓	✓			✓	✓		✓	✓	✓	✓	✓		✓	✓
Dräger															✓	✓				✓												
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

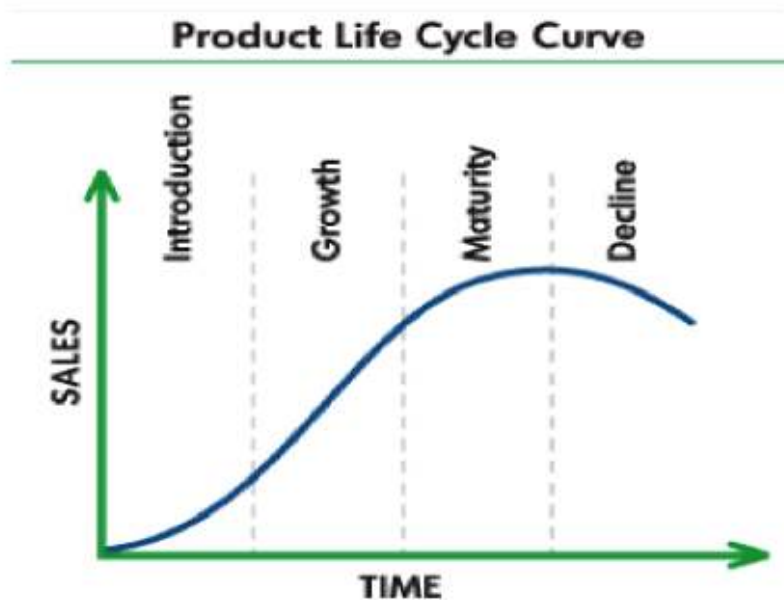
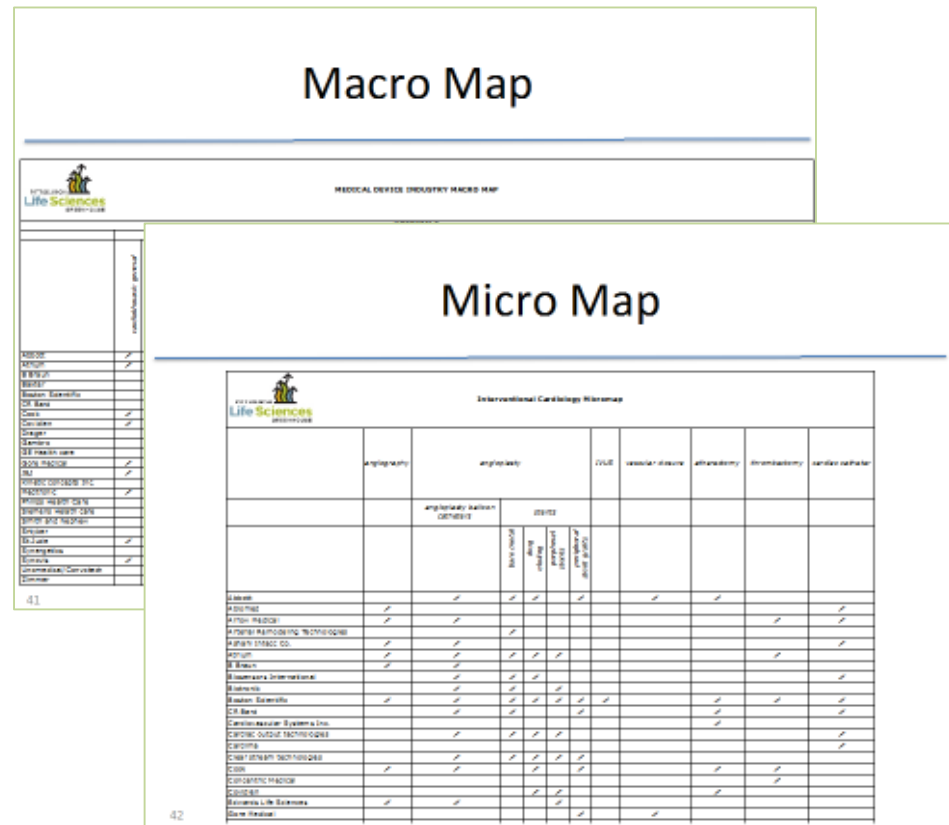


Figure 5.2 Product Life Cycle Management



Tools reveal industry standards so you can plot a winning strategy

- 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 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)