



at the Boise State West Campus

TECHNOLOGY COMMERCIALIZATION

Process from Concept to Market

- PHASES, STAGES, & STEPS
- KEY QUESTIONS
- ACTIVITIES
- DELIVERABLES
- FUNDING SOURCES
- SERVICE PROVIDERS

THE TECenter COMMERCIALIZATION MODEL

PHASES, STAGES, & STEPS

	TECHNICAL	MARKET	BUSINESS
CONCEPT PHASE			
<i>Stage 1</i> Investigation	TECHNICAL ANALYSIS STEP 1	MARKET NEEDS ASSESSMENT STEP 2	VENTURE ASSESSMENT STEP 3
DEVELOPMENT PHASE			
<i>Stage 2</i> Feasibility	TECHNICAL FEASIBILITY STEP 4	MARKET STUDY STEP 5	ECONOMIC FEASIBILITY STEP 6
<i>Stage 3</i> Development	ENGINEERING PROTOTYPE STEP 7	STRATEGIC MARKET PLAN STEP 8	STRATEGIC BUSINESS PLAN STEP 9
<i>Stage 4</i> Introduction	PRE-PRODUCTION PROTOTYPE STEP 10	MARKET VALIDATION STEP 11	BUSINESS START-UP STEP 12
COMMERCIAL PHASE			
<i>Stage 5</i> Growth	PRODUCTION STEP 13	SALES AND DISTRIBUTION STEP 14	BUSINESS GROWTH STEP 15
<i>Stage 6</i> Maturity	PRODUCTION SUPPORT STEP 16	MARKET DIVERSIFICATION STEP 17	BUSINESS MATURITY STEP 18

THE TECHNOLOGY COMMERCIALIZATION MODEL

KEY QUESTIONS

	TECHNICAL	MARKET	BUSINESS
CONCEPT PHASE			
<i>Stage 1</i> Investigation	TECHNICAL ANALYSIS STEP 1 Is this product new, unique, and technically feasible?	MARKET NEEDS ASSESSMENT STEP 2 Does this product meet a clear market demand or solve a problem?	VENTURE ASSESSMENT STEP 3 Will this product or venture opportunity make a profit?
DEVELOPMENT PHASE			
<i>Stage 2</i> Feasibility	TECHNICAL FEASIBILITY STEP 4 What are the total costs associated with producing the product?	MARKET STUDY STEP 5 Who will buy the product, how many will be bought and at what price?	ECONOMIC FEASIBILITY STEP 6 Does this opportunity generate sufficient returns to justify investment?
<i>Stage 3</i> Development	ENGINEERING PROTOTYPE STEP 7 Do you have a prototype that exactly represents the product?	STRATEGIC MARKET PLAN STEP 8 Have you profiled and finalized the target market?	STRATEGIC BUSINESS PLAN STEP 9 Have you finalized your business model, identified total financial needs, and secured seed capital?
<i>Stage 4</i> Introduction	PRE-PRODUCTION PROTOTYPE STEP 10 Have you completed a limited production and tested for performance and reliability?	MARKET VALIDATION STEP 11 Have you made sales?	BUSINESS START-UP STEP 12 Is the management team operational?
COMMERCIAL PHASE			
<i>Stage 5</i> Growth	PRODUCTION STEP 13 Is production process dependable, reliable and optimized?	SALES AND DISTRIBUTION STEP 14 Are you growing market share?	BUSINESS GROWTH STEP 15 Are you on course to achieve your business plan objectives?
<i>Stage 6</i> Maturity	PRODUCTION SUPPORT STEP 16 Are you supporting the product?	MARKET DIVERSIFICATION STEP Have you identified your next generation of products?	BUSINESS MATURITY STEP 18 Are you generating and/or maximizing a return on investment?

THE TECHNOLOGY COMMERCIALIZATION MODEL

ACTIVITIES

	TECHNICAL	MARKET	BUSINESS
CONCEPT PHASE			
<i>Stage 1</i> Investigation	TECHNICAL ANALYSIS STEP 1 <ul style="list-style-type: none"> Define concept Confirm critical assumptions Survey state of the art Id critical barriers Evaluate applicability Determine technology 	MARKET NEEDS ASSESSMENT STEP 2 <ul style="list-style-type: none"> Conduct market overview Id pricing structure Id market barriers Id risks Id distribution channels Id trends and competitors 	VENTURE ASSESSMENT STEP 3 <ul style="list-style-type: none"> Estimate profit potential Conduct self, enterprise and commercialization assessments Id professional needs Id capital needs
DEVELOPMENT PHASE			
<i>Stage 2</i> Feasibility	TECHNICAL FEASIBILITY STEP 4 <ul style="list-style-type: none"> Develop working model Test technical features Assess preliminary producibility Conduct manufacturing assessment Assess safety & environmental features Finalize designs 	MARKET STUDY STEP 5 <ul style="list-style-type: none"> Id and quantify: Market size Customers Volume Prices Distribution Competitors 	ECONOMIC FEASIBILITY STEP 6 <ul style="list-style-type: none"> Formulate financial assumptions Develop pro forma Id seed capital Form advisory team
<i>Stage 3</i> Development	ENGINEERING PROTOTYPE STEP 7 <ul style="list-style-type: none"> Develop prototype Id materials and processes Conduct tests Develop manufacturing methods 	STRATEGIC MARKET PLAN STEP 8 <ul style="list-style-type: none"> Id marketing team Define target market Select market channels Field test 	STRATEGIC BUSINESS PLAN STEP 9 <ul style="list-style-type: none"> Decide venture or license Finalize intellectual property Id management team Select organization structure Write business plan
<i>Stage 4</i> Introduction	PRE-PRODUCTION PROTOTYPE STEP 10 <ul style="list-style-type: none"> Develop production prototype Determine production process Select manufacturing equipment Design field support system Demo product features 	MARKET VALIDATION STEP 11 <ul style="list-style-type: none"> Establish market relationships Conduct limited sales Analyze sales Survey customers Refine marketing plan 	BUSINESS START-UP STEP 12 <ul style="list-style-type: none"> Establish business function Hire staff Execute contracts Secure first-stage financing
COMMERCIAL PHASE			
<i>Stage 5</i> Growth	PRODUCTION STEP 13 <ul style="list-style-type: none"> Prepare commercial design Establish quality control Construct facilities Conduct full production Finalize internal distribution system 	SALES AND DISTRIBUTION STEP 14 <ul style="list-style-type: none"> Expand distribution Analyze competitor response Assess customer satisfaction Assess distributorsatisfaction Refine product features 	BUSINESS GROWTH STEP 15 <ul style="list-style-type: none"> Monitor enterprise position Hire and train personnel Execute contracts Arrange financing Institute vision, mission and management policies
<i>Stage 6</i> Maturity	PRODUCTION SUPPORT STEP 16 <ul style="list-style-type: none"> Maximize production Establish after market support, repairs and spares Warrantee service Implement training program 	MARKET DIVERSIFICATION STEP 17 <ul style="list-style-type: none"> Develop market retention Establish market scan Id new markets Id new products 	BUSINESS MATURITY STEP 18 <ul style="list-style-type: none"> Establish SWOT process Invest profits Monitor product life cycle Monitor business trends Monitor mgmt. technologies Implement innovations

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THE TECHNOLOGY COMMERCIALIZATION MODEL

DELIVERABLES

	TECHNICAL	MARKET	BUSINESS
CONCEPT PHASE			
<i>Stage 1</i> Investigation	TECHNICAL ANALYSIS STEP 1 Provisional patent, patent, copyright, patent scan, license agreement	MARKET NEEDS ASSESSMENT STEP 2 Background research materials	VENTURE ASSESSMENT STEP 3 Preliminary cost and revenue estimate
DEVELOPMENT PHASE			
<i>Stage 2</i> Feasibility	TECHNICAL FEASIBILITY STEP 4 A working model of the product	MARKET STUDY STEP 5 Primary market research	ECONOMIC FEASIBILITY STEP 6 A financial model accurately representing the business opportunity
<i>Stage 3</i> Development	ENGINEERING PROTOTYPE STEP 7 An accurate prototype representing the materials and functionality of the end product	STRATEGIC MARKET PLAN STEP 8 The final marketing plan based upon discussions with suppliers, market representatives, and customers	STRATEGIC BUSINESS PLAN STEP 9 The business plan
<i>Stage 4</i> Introduction	PRE-PRODUCTION PROTOTYPE STEP 10 A limited production	MARKET VALIDATION STEP 11 Sales	BUSINESS START-UP STEP 12 An Enterprise
COMMERCIAL PHASE			
<i>Stage 5</i> Growth	PRODUCTION STEP 13 Production	SALES AND DISTRIBUTION STEP 14 Growing sales	BUSINESS GROWTH STEP 15 Increasing revenues
<i>Stage 6</i> Maturity	PRODUCTION SUPPORT STEP 16 Maximum production	MARKET DIVERSIFICATION STEP 17 New products	BUSINESS MATURITY STEP 18 Profits

THE TECHNOLOGY COMMERCIALIZATION MODEL

FUNDING SOURCES

	TECHNICAL	MARKET	BUSINESS
CONCEPT PHASE			
<i>Stage 1</i> Investigation	TECHNICAL ANALYSIS STEP 1 Personal finances	MARKET NEEDS ASSESSMENT STEP 2 Personal finances	VENTURE ASSESSMENT STEP 3 Personal finances
DEVELOPMENT PHASE			
<i>Stage 2</i> Feasibility	TECHNICAL FEASIBILITY STEP 4 Friends and family	MARKET STUDY STEP 5 Friends and family	ECONOMIC FEASIBILITY STEP 6 Friends and family
<i>Stage 3</i> Development	ENGINEERING PROTOTYPE STEP 7 Angel investors (seed round)	STRATEGIC MARKET PLAN STEP 8 Angel investors (seed round)	STRATEGIC BUSINESS PLAN STEP 9 Angel Investors (seed round)
<i>Stage 4</i> Introduction	PRE-PRODUCTION PROTOTYPE STEP 10 Angel investors (seed round)	MARKET VALIDATION STEP 11 Angel investors (seed round)	BUSINESS START-UP STEP 12 Angel investor (seed round)
COMMERCIAL PHASE			
<i>Stage 5</i> Growth	PRODUCTION STEP 13 Venture Capital (early stage round)	SALES AND DISTRIBUTION STEP 14 Venture Capital (early stage round)	BUSINESS GROWTH STEP 15 Venture Capital (early stage round)
<i>Stage 6</i> Maturity	PRODUCTION SUPPORT STEP 16 Venture Capital (Mid/late stage rounds)	MARKET DIVERSIFICATION STEP 17 Venture Capital (Mid/late stage rounds)	BUSINESS MATURITY STEP 18 Venture Capital (Mid/late stage rounds)

THE TECHNOLOGY COMMERCIALIZATION MODEL

SERVICE PROVIDERS

	TECHNICAL	MARKET	BUSINESS
CONCEPT PHASE			
<i>Stage 1</i> Investigation	TECHNICAL ANALYSIS STEP 1 Intellectual property attorneys, engineers, scientists	MARKET NEEDS ASSESSMENT STEP 2 Internet, trade articles, industry representatives	VENTURE ASSESSMENT STEP 3 Faculty, interns, other entrepreneurs
DEVELOPMENT PHASE			
<i>Stage 2</i> Feasibility	TECHNICAL FEASIBILITY STEP 4 Technicians, engineers, scientists, TechHelp	MARKET STUDY STEP 5 Faculty, interns, market research firms	ECONOMIC FEASIBILITY STEP 6 Faculty, interns, CPAs, financial consultants, entrepreneurs
<i>Stage 3</i> Development	ENGINEERING PROTOTYPE STEP 7 Technicians, engineers, scientists, TechHelp	STRATEGIC MARKET PLAN STEP 8 Faculty, interns, market research firms, entrepreneurs, industry representatives	STRATEGIC BUSINESS PLAN STEP 9 Faculty, interns, corporate attorneys, marketing firm, CPAs, mentors, investors, consultants
<i>Stage 4</i> Introduction	PRE-PRODUCTION PROTOTYPE STEP 10 Technicians, engineers, scientists, TechHelp	MARKET VALIDATION STEP 11 Sales consultants, public relations firm	BUSINESS START-UP STEP 12 Attorneys, CPAs, investors, human resource consultants, marketing consultants
COMMERCIAL PHASE			
<i>Stage 5</i> Growth	PRODUCTION STEP 13 Technicians, engineers, manufacturers, consultants, TechHelp	SALES AND DISTRIBUTION STEP 14 Interns, Marketing consultants	BUSINESS GROWTH STEP 15 Multiple consultants
<i>Stage 6</i> Maturity	PRODUCTION SUPPORT STEP 16 Technicians, engineers, manufacturers, consultants, TechHelp	MARKET DIVERSIFICATION STEP 17 Faculty, Interns, Marketing consultants	BUSINESS MATURITY STEP 18 Multiple consultants