Principles of Innovation and Entrepreneurship -ENTR 3000 Professor Jack M. Wilson

Review summary sheet for Final Exam –Chapters 1-17 and Lean Launchpad and online material.

For cases and materials listed below be sure you know the definitions and the key examples.

Cases:

- ILINC LearnLinc
- Harish Hande-Solar Electric Corporation
- Muhammad Yunus
- Mother Teresa
- Uber
- ZipCar
- Champ-MacNeillUSA
- NetFlix
- Segway
- Theranos
- 3M goes from hero to also ran in innovation (last chapter.)

Ch. 1-Intro. to Entrepreneurship/Entrepreneurs – The Innovation Imperative

Why does Innovation and Entrepreneurship Matter? 1. Address problems and create economic and social opportunity. 2. Avoid failure 3. Succeed greatly 4. Regional economic development. 5. Jobs, cures, community interactions.

Schumpeter- Creative Destruction

Clayton Christenson: Disruptive Innovation, Disruptive Technology, Creative disruption Digital, Wang, Data General, etc.

Define Entrepreneurship (Schumpeter, Drucker, Timmons)

Types of Innovation: Product, Process, Position, Business Model Innovation (Paradigm)

Disintermediation and Mass Customization as Innovation.

Radical versus Incremental and examples of each

Invention is not (necessarily) Innovation

Ken Olsen, Digital, felt that home computers would never happen.

Corporate Entrepreneurship, Social Entrepreneurship

Models of Innovation and Entrepreneurship: Causal, Effectual, LeanLaunchpad, Steve Blank – know a bit about each.

Characteristics of the Entrepreneur, Myths of Entrepreneurship

Passion, Product focus, Tenacity despite failure, Execution Intelligence

Ch. 2-Types of Entrepreneurship and Social Entrepreneurship

Entrepreneurial Firms, Lifestyle Firms, Salary Substitute Firms

Types of Exit Strategies

Technological Entrepreneurship, Small Business Entrepreneurship, Corporate Entrepreneurship, Social Entrepreneurship.

Examples of Corporations that failed due to failure to innovate and those that succeeded due to innovation.

Social Entrepreneurs: mission driven but can be either non-profit or for-profit. Give examples. No margin -no mission.

Triple Bottom Line: 1. Social, 2. Environmental, 3. Financial

Motivations: 1. Govt/Community Pressure/Regulation, 2. Aligning Corporate Values, 3. Learning Lab.

Types of motivations: Darwinians, Communitarians, Missionaries

Challenges of the Social Enterprise: Resources, Stakeholders with diverse needs, volunteer coordination, funding flow, huge nearly unsolvable problems.

Ch. 3 –Intro to Business Models Chapter 16 in Text

How a company uses its resources, structures its relationships, interfaces with customers, creates value, and returns revenues and profits. Looking at the business model tells you how a company can become self-sustaining

Uber as an example. Compare Uber to Taxis in regard to Business Model.

Dell as an example: compare Dell to previous computer manufacturers.

Core Logic –articulates the mission and business model

1. Value proposition, 2. Target Market; 3. Suppliers, 4. Activities, 5. Kind and how much value created.

Fatal Flaws 1. Misread of customer 2. Window of Opportunity –timing 3. Utterly unsound economics

Disruptive Innovation: Examples

Business concept blind spot. Examples Digital, Wang; Kodak, Polariod,

Product/market Scope

The Business Model Canvas

The Pivot

Chapter 3 Globalization

Why study global entrepreneurship? Large fast growing markets; new communication, regulation, and transportation; worldwide consumers; living on the cutting edge; avoiding missing out.

Enablers: 1. Tech. advances 2. Free trade agreements, 3. Freer movement of people

Research Universities appear to be a great resource

Global Supply chains offer opportunities. “Flat World”

Spillovers –movement of ideas and intellectual property across borders –legal and illegal.

Cluster development –Boston, Silicon Valley, Beijing, Bangalore,

"The Bottom of the Pyramid," large markets in less affluent regions. Tata Nano; Selco, Grameen, etc.

National Systems of Innovation –positives: large economy, foreign completion in domestic markets, public R&D, venture capital. –negatives: fragmented markets, high corporate taxes, prosperity/complacency.

Specific opportunities: natural resources, local demand, high regional prices, local skill sets

The Rise and Fall of the BRICS.

Global Sourcing; Global Supply Chain

Immigration and Emigration and Entrepreneurship

Chapter 4 Sustainability

Sustainability: 1. Business model and business execution 2. Environmentally and socially sustainable

Governments can encourage this through regulation or tax credits. Being green can sometimes reduce costs of energy, materials, or waste.

From "Cradle to grave" to "Cradle to Cradle" Don't discard, but reuse and recycle.

Operational Optimization –Compliance to regulation and improvement in efficiency

Operational Transformation –New Business Models that are fundamentally greener.

Must: 1. Incorporate **externalities,** 2. Increase agricultural output with less input, 3. Halt deforestation and plant trees, 4. Halve Carbon Emissions from 2005, 5. Reduce energy demand

Need for responsible innovation

Chapter 5 Entrepreneurial Creativity

Five skills: Associating, questioning, observing, experimenting, networking

Divergent versus convergent thinking. Start with D and move toward C

Left (logic, language, calculation) versus Right Brain (patterns, links, emotion) thinking – creativity uses both –usually right first.

Machiavelli: creativity is often seen as dangerous by the establishment

Defeating the arguments against (see list) requires salesmanship and communication.

Sun Tsu: Know yourself and your adversary

Entrepreneurial Awareness or Alertness: Some individuals are more open to and aware of opportunities. Need a prepared mind.

Other factors : Prior Experience, Cognitive factors, social networks, creativity

Preparation, incubation, insight (Aha!), evaluation, elaboration

Idea generators and how they get to market –licensing, new ventures, etc

Crossing the Chasm.

Ideation or Brainstorming, Focus groups, internet/library research, day-in-the-life, internet idea bank

Supervisory approaches –good and bad

Chapter 6 Sources of Innovation

Forces driving innovation and entrepreneurship: 1.Economic 2. Social 3. Technological 4. Political/Regulatory -Know examples of each.

Drivers of Innovation:

- Knowledge Push – New knowledge or research suggest some new opportunities
- Need Pull – When an unfulfilled need is present and someone comes up with an idea to fill that need.
- Process Innovation – making an existing process work better
- Total quality management, business process re-engineering, Six Sigma, Lean Management, etc.
- Discovering customers at "The Base (or Bottom) of the Pyramid" as Prahalad described.
- Crisis Driven –Need pull on steroids. Zika Virus vaccine
- Mass Customization: Have it your way. Dell Computer, in 80s and 90s built PCs to order and shipped direct to customer. Converse allows customers to order personalized athletic shoes.
- User Innovation – crowd sourcing and extreme users
- Imitation –Often the first source of innovation in emerging economies.
- Recombinant Innovation –New combinations of existing things.
- Changes in regulatory and legal processes.
- Design driven innovation – Apple always focused on design even when releasing products that were not that much different than existing products.
- Pure accidents –discovery of penicillin, Post-it notes, Viagra, Teflon

Chapter 7 Search Strategies

Five Question Framework- What, When, Where, Who, How

"Push" versus "Pull" Opportunity driven or need driven.

Market research useful for incremental innovation, but less useful for radical.

Examples of incremental versus radical for types of innovation (product, process, position, paradigm/business model)

Exploit versus Explore

Open Innovation

Chapter 8 Building the Case and the Business Plan

Parts of the Business Plan, shortcomings of the business plan

The Lean Launchpad

Steve Blank – no business plan survives first contact with the customer.

Business model canvas

The Pivot, Customer Development process, Search for a Business model versus execution of a business model

Customer Development Process" with the concepts of:

- "minimum viable product (MVP),"
- "iterate and pivot",
- "get out of the building," and
- "no business plan survives first contact with customers.

NSF iCore Program

Chapter 9 Leadership and Teams

Components:

- Shared vision, leadership and the will to innovate
- Appropriate structures
- Key Individuals; Champions, promoters, gatekeepers and other roles which energize or facilitate innovation
- Effective Team working (local, cross-functional, inter-organizational.
- High involvement in Innovation
- Creative Climate
- External Focus

Cognitive characteristics

- Information acquisition and dissemination.
- Intelligence. -The ability and capability to interpret, process and manipulate information.
- Sense making. –Giving meaning to information.
- Unlearning. - reducing or eliminating existing routines or behaviors,
- Implementation and improvisation.

Adaptor –Do Better versus Innovators –do differently Kirton Adaptation Innovation Theory

Leadership characteristics

- bright, alert and intelligent; - similar entrepreneurial awareness (or alertness)
- seek responsibility and take charge;
- skillful in their task domain;
- administratively and socially competent;
- energetic, active and resilient;
- good communicators.

Entrepreneurial Awareness/Alertness

- Prior Experience
- Cognitive Factors –entrepreneurial alertness
- Social Networks –solo entrepreneurs and network entrepreneurs
- Strong tie relationships frequent interaction -Often tend to see problems in the same way
- Weak tie relationships –in-frequent Weak ties are shown to lead to more ideas –different perspectives.
- Creativity – the process of generating new, often unique, and useful, ideas.

Creativity, Preparation, Incubation, Insight, Evaluation, Elaboration

Hetero- versus homogeneity in teams. Advantages and disadvantages

Chapter 10 Networks

Chesbrough's Principles of Open Innovation:

- Not all smart people work for you.
- External ideas can help create value, but it takes internal R&D too
- It is better to build a better business model than get to market first
- Buy other's IP when necessary
- Your R&D should include knowledge generation and knowledge acquisition

Partnership models: Fewer suppliers, longer term relationships: Greater equity –cost transparency; Focus on value flows –the relationship and not the contract; Vendor assessment and development; Two way or third party assessment; Mutual learning –share;

User engagement:

- Co-development –Linux or Bitcoin
- Lead users –ethnographic design.
- Crowd-sourcing – Wikipedia; Dell Idea storm, Facebook translation; Kickstarter funding.
- Extreme Users

Chapter 11 Developing New Products and Services

Four stage model: 1. Concept generation 2. Project assessment and selection 3. Product or service development 4. Product or service commercialization

Success factors : Product advantage; market knowledge; clear product definition; risk assessment; project organization; project resources; proficiency of execution; top management support

Diffusion –How ideas travel through networks. Individual deciders; collective deciders; Authoritative deciders.

Barriers to adoption: Economic, Behavioral, Organizational, and Structural

Factors affecting diffusion:

- Relative advantage -
- Compatibility –how compatible is the innovation to existing systems?

- Complexity -How complex is it to implement?
- Trialability –the degree to which an innovation can be experimented with on a limited basis.
- Observability -the degree to which the results of an innovation are visible to others.

Chapter 12 Creating New Ventures

Know Gazelles, Unicorns, SMEs, Superstars, NTBF, Bayh-Dole act

Forms of new ventures: Sole proprietorship; Partnership; Corporation, Limited Liability Company (LLC). Know the tax and liability advantages of each.

Sources of financing, venture capital, friends and families, angels, crowd-funding etc.

Chapter 13 Developing Businesses and Talent through Corporate Venturing

Corporate venturing, intrapreneurship, spin-offs, etc.

Skunk works

ILinc and Intel Ventures; case study

Difficulties of Entrepreneurship in Corporations: jealousy, competition, resource competition, fear of cannibalization, hostility,

Key Team members

- Technical innovator – responsible for the main technological development
- Business innovator or venture manager – responsible for the overall progress of the venture
- Product champion – promotes the venture through the early critical stages
- Executive champion or organizational champion – acts as a protector and buffer between the corporation and venture
- High-level executive – responsible for evaluating, monitoring and authorizing resources for the venture, but not the operation of specific ventures.

Chapter 14 Growing the Enterprise

Recap Gazelles, Unicorns, and geographic extent

Theranos as an example

Teams with complementary capability –(ex: Steve Jobs and Steve Wozniak or Bill Gates and Paul Allan or Larry Page and Sergey Brin or etc.)

Funding is key: 1. Initial financing for launch. 2. Second-round financing for initial development and growth. 3. Third-round financing for consolidation and growth. 4. Maturity or exit.

Chapter 15 Intellectual Property and Intellectual Capital

Patents (Utility, Design, Plant) **-** must be Novel, Useful, Non-Obvious

Bayh-Dole Act of 1980 gave Universities the right to patent and license.

Prior to 2013 it was first to invent. After 2013 it is first to file.

Prior to 2013 genes could be patented. After 2013 they cannot.

Business Method Patent – Amazon.com's one-click ordering system, Priceline.com's "name-your-price" business model Netflix's method for allowing customers to set up a rental list of movies to be mailed to them,

Advantages: Monopoly, discourages imitation, provides competitive advantage to raise capital, cross licensing, and keeps others from using as trade secret.

Disadvantages: Requires disclosure, only a 14-20 year monopoly, design around or circumvent, costly to defend, technology changes, worldwide patent process.

Copyright Protects written works, music , drama, sculpture, art, pictures. Need not be registered, but protection is better if registered. Can use the © bug.

Trademarks word, name, symbol, or device if registered can use the TM bug.

Trade Secrets -must make a strong effort to keep them secret.

Chapter 16 Building the Business Plan

See summary earlier in this review before Chapter 3.

Chapter 17 Managing from Idea to Result

Recap comparison of Serial Models or Causal Models (Bessant and Tidd or business planning) and compare to newer "agile" processes that are more iterative. Like Lean Luanchpad or Effectual Entrepreneurship.

Failure is a key component of learning. Fail fast and then pivot. Provides insights about what not to do. Failure helps build capability. Failure helps others learn and build capability

Dynamic Capability – the ability to learn quickly from failure and then pivot.

How 3M went from a very innovative firm to a mediocre innovative firm. Incremental Innovation and Process Innovation can be limiting.

Key positive factors: Recognition and reward. • Reinforcement of core values. • Sustaining 'circulation'. • Allocating 'slack' and permission to play. • Patience. • Acceptance of mistakes and encouragement of risk-taking. • Encouraging 'bootlegging'. • Policy of hiring innovators.

Characteristics of Innovative firms: Shared vision, leadership and the will to innovate • Appropriate structure to support innovation • Identifying and supporting key individuals • Effective team working • High involvement innovation • Creative climate • External focus.

• Innovation Audit – A structured review of the innovation capability across any organization

• Innovation Strategy – A statement how innovation is going to help an enterprise full fill its mission, and how it does that.

• Innovation Strategy Deployment – The process of communicating and implementing the strategy, and enabling people to do their part.