INFO5992 Week 7 Cheatsheet

Commercialisation I: Startups, Lean Startup & Agile Development

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1. UNICORN COMPANIES

Definitions

- **Unicorn**: Privately held startup valued at **$1+ billion**
- **Decacorn**: Privately held startup valued at **$10+ billion**
- **Undercorn**: Unicorns that sell/IPO below their last private valuation

Key Statistics (as of 2024)

- Over 1,200 global unicorns worth $3.86 trillion
- Top countries: USA (561), China (173), India (65)
- Top industries: Fintech, Internet Software, E-commerce, AI

Five Primary Business Models Among Unicorns

1. **E-Commerce (36%)**: Consumer pays for goods/services online (Uber, Airbnb)
2. **Audience (27%)**: Free to use, makes money through ads/leads (Snapchat)
3. **Enterprise Software (20%)**: Business pays for larger-scale software
4. **SaaS (12%)**: Cloud-based software via freemium/monthly model (Slack, MongoDB)
5. **Consumer Electronics/IoT (6%)**: Physical products (Xiaomi)

Important Characteristics

- **32% have network effects** - value increases with more users
- Many are **platform companies** (ByteDance, Uber, Stripe)
- Focus on **"winner-take-all" markets** and monopoly for a time
- **Network effects** drive winner-take-all economics

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2. STARTUPS VS TRADITIONAL COMPANIES

What is a Startup?

Steve Blank's Definition: > "A temporary organization in search of a scalable, repeatable, profitable business model"

Eric Ries's Definition: > "A human institution designed to deliver a new product or service under conditions of extreme uncertainty"

Key Distinction

- **Established Companies**: Execute a business model
- **Startups**: Search for a business model

Comparison Table

Aspect	Established Companies	Startup Companies
Markets	Known	Mostly unknown (hypothesis only)
Customers	Known	Mostly unknown (hypothesis only)
Products	Known	Mostly unknown (hypothesis only)
Future Features	Learn from customers	Learn from potential customers, test hypotheses
Business Model	Execute current model	Search for best model
Product	Full specifications	Minimum feature set (MVP)
Development	Smooth execution, proven methods	Pivots until find market fit
Structure	Relatively stable	Fluid

Why Small Firms Can Innovate Better

- **More flexible and entrepreneurial**
- Can **pivot quickly** based on new observations
- Less **bureaucratic inertia**
- Fewer commitments to current technologies
- **Innovation favors agility**

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3. TRADITIONAL BUSINESS PLAN APPROACH

Components

1. Executive summary
2. Description of product/service
3. Industry analysis
4. Customer analysis
5. Competitor analysis
6. Marketing and sales plan
7. Operations and HR plans
8. Financial plan (5-year forecasts)

The 9 Deadly Sins (Why This Fails for Startups)

1. **“I know what the customer wants”** assumption
2. **“I know what features to build”** flaw
3. **Focus on launch date** instead of learning
4. **Emphasis on execution** instead of testing hypotheses
5. **No room for trial and error**
6. **Wrong job titles** - traditional roles don’t fit startup needs
7. **Sales/marketing execute a plan** rather than discover customers
8. **Presumption of success** leads to premature scaling
9. **Management by crisis** leads to death spiral

Why Traditional Plans Fail for Tech Startups

- **Many uncertainties** - feasibility, customers, revenue model unknown
- **Untested assumptions** - plan relies on guesses
- **Too rigid** - hard to change direction quickly
- **First customer contact too late** - at beta/launch phase

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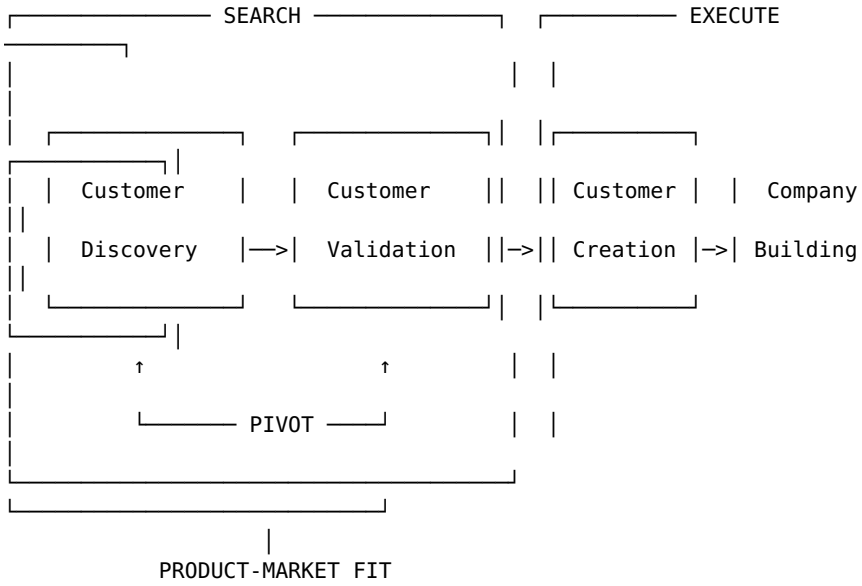
4. CUSTOMER DEVELOPMENT PROCESS (Steve Blank)

The Four Phases



Phase Descriptions

1. Customer Discovery (Search) - Capture vision and turn into business model hypotheses - Develop plan to test hypotheses with customers - Test hypotheses with real customers - **Goal**: Find product-market fit

2. Customer Validation (Search) - Test whether business model is repeatable and scalable - Verify customers will actually buy - **Milestone**: Product-Market Fit achieved

3. Customer Creation (Execute) - Build end-user demand - Build sales channels - Scale the business - Turn prospects into purchasers

4. Company Building (Execute) - Transition from startup to traditional company - Establish departments and processes - Scale operations

Product-Market Fit

Definition: The degree to which a product satisfies a strong market demand

Step between Customer Validation and Customer Creation

Signs it’s NOT happening: - Customers not getting value - Word of mouth not spreading - Usage not growing fast - Press reviews are “blah” - Sales cycle too long - Many deals never close

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5. THE 14 RULES (Customer Development Manifesto)

Critical Rules

Rule 1: **Get Outside the Building** - No facts exist inside your building - Must talk to real customers

Rule 2: **Pair with Agile Development** - Customer Development + Agile Development work together

Rule 3: **Failure is Integral** - Failure is part of the search process - Learn from failures quickly

Rule 4: **Make Continuous Iterations and Pivots** - Expect to change direction based on learning

Rule 5: **No Business Plan Survives First Contact** - Use Business Model Canvas instead - Plans must be flexible

Rule 6: **Design Experiments to Test Hypotheses** - Scientific approach to validation - Test assumptions systematically

Rule 7: **Market Type Changes Everything** Five market types: 1. New product into existing market 2. New product into new market 3. Re-segment existing market (low-cost) 4. Re-segment existing market (niche) 5. Clone successful model from another country

Rule 8: **Different Metrics for Startups** - Not revenue/profit initially - Focus on learning metrics

Rule 9: **Fast Decision-Making** - Speed, cycle time, and tempo matter

Rule 10: **Passion is Critical** - Founders must be passionate

Rule 11: **Different Job Titles** - Startup roles ≠ corporate roles

Rule 12: **Preserve Cash** - Spend only when validated

Rule 13: **Communicate and Share Learning** - Entire team must learn together

Rule 14: **Get Buy-In** - Success requires team commitment

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6. AGILE DEVELOPMENT

The Agile Manifesto (2001)

We value: 1. **Individuals and interactions** over processes and tools 2. **Working software** over comprehensive documentation 3. **Customer collaboration** over contract negotiation 4. **Responding to change** over following a plan

12 Principles (Key Ones)

1. **Satisfy customer** through early and continuous delivery
2. **Welcome changing requirements**, even late in development
3. **Deliver working software frequently** (weeks to months)
4. **Business people and developers work together daily**
5. **Build projects around motivated individuals**

6. **Face-to-face conversation** is most efficient
7. **Working software is primary measure** of progress
8. **Sustainable development** - constant pace indefinitely
9. **Technical excellence and good design** enhance agility
10. **Simplicity** - maximize work not done
11. **Self-organizing teams** produce best results
12. **Regular reflection and adjustment** for effectiveness

Characteristics

- **Iterative, incremental, evolutionary**
- **Efficient face-to-face communication**
- **Very short feedback loops**
- **Quality focus**
- **Adaptive to change**

Key Agile Concepts

User Stories - Functional increments of work - Format: “As a [user type], I want to [action] so that [benefit]” - Example: “As a shopper, I want to search for products so I can find what I’m looking for”

Daily Meetings (Stand-ups) - Same time each day - Brief updates from each team member - What was completed, what’s blocking progress

Incremental Development - Each version is usable - Builds upon previous version - Adds user-visible functionality

Iterative Development - Intentionally “repeat” activities - Revisit same work products - Refine based on feedback

Personas - Detailed, synthetic biographies of fictitious users - Used when UX is major factor

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7. THREE COMMON AGILE METHODOLOGIES

Comparison Table

Methodology	Guiding Principles	Best For
SCRUM	Empower creative, cross-functional teams	Creative cultures with high trust and collaboration; Radical innovation teams
KANBAN	Visualize workflows and limit work in process	Process-oriented cultures preferring evolutionary improvements with few prescribed practices
		Process-oriented cultures

LEAN DEVELOPMENT	Eliminate waste from system as whole	preferring evolutionary improvements with overarching values but no prescribed practices

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Scrum

- **Empirical framework** for managing product development
- **Small teams** work in short cycles (sprints)
- **Daily stand-ups** for coordination
- **Sprint planning, reviews, retrospectives**

Kanban

- **Visualize work** on boards
- **Limit work in progress** to prevent overload
- **Continuous delivery** emphasis
- **Pull-based system**

Lean Development

- **Eliminate waste** - only valuable features
- **Prioritize** selected features
- **Small batches** for delivery
- **Speed and efficiency** of workflow
- **Rapid, reliable feedback**
- **Concurrent work**, minimize dependencies
- **Automated unit tests** written with code

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8. THE LEAN STARTUP (Eric Ries)

Core Concept

Combines: - Steve Blank's Customer Development Process - Agile Software Development

The Build-Measure-Learn Loop

```
 IDEAS
   ↓
BUILD → CODE
   ↓
MEASURE → DATA
   ↓
LEARN
   ↓
(back to IDEAS)
```

Minimize total time through the loop

Three Key Elements

1. Learn Faster - Split tests - Customer interviews - Customer development - Five Whys/Root cause analysis - Customer advisory board - Falsifiable hypothesis - Product owner accountability - Cohort analysis - Cross-functional teams - Smoke tests

2. Build/Code Faster - Unit tests - Usability tests - Continuous integration - Incremental deployment - Free & open-source components - Cloud computing - Cluster immune system - Just-in-time scalability - Refactoring - Developer sandbox

3. Measure Faster - Split tests - Clear product owner - Continuous deployment - Usability tests - Real-time monitoring - Customer liaison - Funnel analysis - Cohort analysis - Net promoter score - Search engine marketing - Real-time alerting - Predictive monitoring

Five Principles of Lean Startup

1. **Entrepreneurs are everywhere**
   - Don't need garage to be in startup
   - Startup mindset can exist anywhere
2. **Entrepreneurship is management**
   - Startup is institution requiring new management
   - Not just a product
3. **Validated learning**
   - Learn how to build sustainable business
   - Scientifically test each vision element
   - Run experiments
4. **Innovation accounting**
   - Measure progress, set milestones, prioritize work
   - New accounting specific to startups
   - Not traditional metrics
5. **Build-Measure-Learn**
   - Turn ideas → products
   - Measure customer response
   - Learn whether to pivot or persevere
   - All processes should accelerate this loop

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9. MINIMUM VIABLE PRODUCT (MVP)

Definition (Eric Ries)

> "The minimum viable product is that version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort"

Key Concepts

What MVP Is: - **Smallest version** that delivers core value - **Testable** with real users - **Learning tool** - not about perfection - **Fast to market** approach

What MVP Is NOT: - Not a minimal/incomplete product - Not a beta test - Not a prototype that doesn't reach customers

Purpose

- **Customer discovery in quickest time**
- **Minimum effort** required
- **Maximum validated learning**
- **Reduce waste** of time and resources

The Problem vs Solution

Problem (Traditional):

```
Idea → Market Research → Product Development → Customer Development
```

```
                                                    ↓
                                          Bad news late → No time
to pivot
                                                    ↓
                                             Slow success or
failure
```

Solution (MVP Approach):

```
Idea → Market Research → MVP (with pivots) → Fast success likely
              ↑                  ↓
              └─── Good/Bad news ─┘
                   (iterate quickly)
```

Frank Robinson Quote

> “When I first said ‘minimum viable product’ I never had to repeat myself. The words went viral right before my eyes.”

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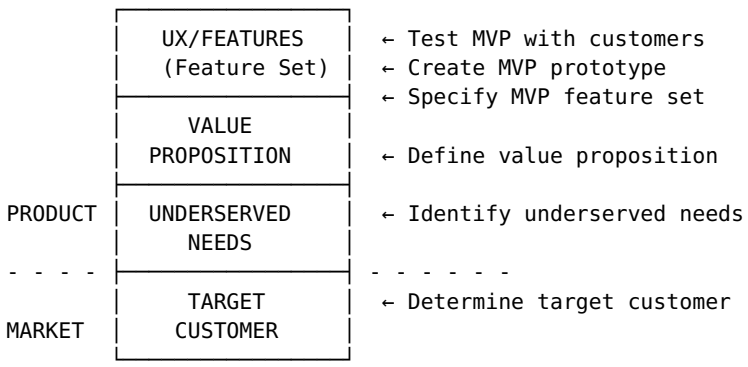
10. PRODUCT-MARKET FIT PYRAMID

The Pyramid (Bottom to Top)



Steps (Dan Olsen’s Process)

Market Layer: 1. **Determine target customer** - Who exactly are you building for? - Specific segment, not “everyone”

2. **Identify underserved customer needs**
   - What problems aren’t being solved well?
   - What are pain points?

Product Layer: 3. **Define value proposition** - How will you solve their problems? - What unique value do you offer?

4. **Specify MVP feature set**
   - What minimum features deliver the value proposition?
   - What can you cut and still solve the problem?
5. **Create MVP prototype**
   - Build something testable
   - Doesn’t need to be fully functional
6. **Test with customers**
   - Get real feedback
   - Measure, learn, iterate

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11. PRODUCT-MARKET FIT

Marc Andreessen's Definition

> "Product-market fit means being in a good market with a product that can satisfy that market"

Signs of GOOD Product-Market Fit

- Customers getting clear value from product
- Word of mouth spreading naturally
- Usage growing organically
- Positive press reviews
- Sales cycle shortening
- High deal close rate
- Customers asking for more features
- Retention rates increasing

Signs of POOR Product-Market Fit

- ✕ Customers not getting value
- ✕ Word of mouth not spreading
- ✕ Usage not growing fast
- ✕ Press reviews are "blah"
- ✕ Sales cycle takes too long
- ✕ Lots of deals never close
- ✕ Need heavy marketing spend to acquire customers

When It Happens

- **After** Customer Validation
- **Before** Customer Creation
- Critical milestone before scaling

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12. KEY STARTUP CONCEPTS SUMMARY

How to Get Startup Ideas (Paul Graham)

DON'T: - Try to think of startup ideas - Make up problems

DO: - Look for real problems - Preferably problems you have yourself - "Live in the future, then build what's missing"

Best Ideas Have 3 Things: 1. Something **founders themselves want** 2. That they **can build themselves** 3. That **few others realize are worth doing**

Examples: Microsoft, Apple, Yahoo, Google, Facebook all started this way

The "Well" Concept

- Build something a **small number want a LOT**
- Rather than something a **large number want a LITTLE**
- Helps focus and build quickly
- Easier to get initial traction

User Innovation

- Many innovations start with users solving own problems
- Phase 1: Users develop for themselves
- Phase 2: Other users evaluate, copy, improve
- Phase 3: Producers enter when market potential clear

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13. EXAM TIPS & KEY TAKEAWAYS

Must-Know Definitions

1. **Unicorn/Decacorn/Undercorn**
2. **Startup** (both Blank and Ries definitions)
3. **MVP** (Minimum Viable Product)
4. **Product-Market Fit**
5. **Pivot** - changing direction based on learning
6. **Validated Learning** - scientifically testing assumptions

Key Frameworks to Remember

1. **Customer Development Process** (4 phases)
2. **Build-Measure-Learn Loop**
3. **Product-Market Fit Pyramid**
4. **Agile Manifesto** (4 values, know at least 6 principles)

Critical Comparisons

- **Startups vs Established Companies** (know table)
- **Traditional Business Plan vs Customer Development**
- **Waterfall vs Agile Development**
- **Scrum vs Kanban vs Lean**

Important Concepts to Explain

1. Why traditional business plans fail for startups
2. Why startups use MVP approach
3. How Customer Development reduces risk
4. Role of Agile in Lean Startup
5. Network effects and winner-take-all markets

Common Exam Question Patterns

1. “What is X and why is it important for startups?”
2. “Compare and contrast X vs Y”
3. “How does X help ensure product-market fit?”
4. “What are the key differences between startups and established companies?”
5. “Explain the Customer Development Process”

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14. REAL-WORLD EXAMPLES

Google vs AltaVista

- **AltaVista**: Efficient search, but lost focus on portal features
- **Google**: Recognized links as indexing - different approach
- **Lesson**: Innovation through different perspective, not just execution

Facebook vs MySpace

- **MySpace**: Owned by News Corp, rigid direction
- **Facebook**: Mark Zuckerberg let market drive features
- **Lesson**: Willingness to pivot based on user feedback

Airtasker Example (from Tutorial)

- **Target**: Sydney young professionals, students
- **MVP**: Basic online bulletin board for task posting
- **Evolution**: Added reviews, payments, verification later
- **Lesson**: Start simple, add features based on real usage

Canva Example (from Tutorial)

- **Start**: Simple web-based design tool
- **Evolution**: Added collaboration, integrations, mobile, templates
- **Driven by**: User feedback and usage patterns
- **Lesson**: Build-measure-learn in action

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15. QUICK REFERENCE ACRONYMS

- **MVP**: Minimum Viable Product
- **PMF**: Product-Market Fit
- **UX**: User Experience
- **SaaS**: Software as a Service
- **IoT**: Internet of Things
- **API**: Application Programming Interface
- **IPO**: Initial Public Offering
- **VC**: Venture Capital
- **B2B**: Business to Business
- **B2C**: Business to Consumer

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16. IMPORTANT PEOPLE TO KNOW

1. **Steve Blank** - Customer Development Process, “Get out of the building”
2. **Eric Ries** - Lean Startup, Build-Measure-Learn loop
3. **Marc Andreessen** - Product-Market Fit definition, co-founder Netscape
4. **Paul Graham** - Y Combinator founder, startup ideas philosophy
5. **Peter Thiel** - PayPal co-founder, “Zero to One”, monopoly focus
6. **Frank Robinson** - Coined “Minimum Viable Product”
7. **Dan Olsen** - Product-Market Fit Pyramid

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17. FINAL CHECKLIST FOR EXAM

✓ Can explain what makes a startup different from established company
✓ Know all 4 phases of Customer Development Process
✓ Can draw and explain Build-Measure-Learn loop
✓ Understand MVP concept and can give examples
✓ Can define Product-Market Fit and signs of good/poor fit
✓ Know The 14 Rules (at least 7-8 key ones)
✓ Understand 4 values of Agile Manifesto
✓ Can compare Scrum/Kanban/Lean Development
✓ Know why traditional business plans fail for startups
✓ Can explain how Customer Development + Agile = Lean Startup
✓ Understand network effects and winner-take-all markets
✓ Can describe Product-Market Fit Pyramid steps

Good luck with your exam! Remember: Startups search for business models, companies execute them.