Preliminary Material: Please Do Not Quote

This presentation contains preliminary data and analyses. Our final report on this research will be published on this site in November, 1999.
Software Entrepreneurism in Korea

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Software Entrepreneurism in Korea

An eight-month study of a country that was agrarian in 1960 and is now the world's 11th largest industrial economy.
Software and Wealth: How Software Creates Value

- Software products & services have grown rapidly to a $400B global industry in 1998.
  - 3 of the 10 richest people in the United States
- A tool for competition in all industries
  - Cost reduction, operational efficiency, global reach
  - Strategy: TQM, ERP, BPR, 1:1, CRM, KM, SCM, SFA, ...
  - Software-enabled businesses: Yahoo!, e-Trade, e-Bay
- An essential component of products of all sorts
  - Computers, cars, airplanes, phones, electronics, toys
- The use of software in business is accelerating
The Good News

- All markets for software are growing at least 10-15% annually.
- There is a global shortage of software and software talent.
- Dramatic expansion of demand and entirely new platforms, of the magnitude of the PC and Internet, are likely again, soon.
More Good News – Korea’s Strengths

- Educated workforce
- Strong existing technology industries
- Proactive government
- Good telecommunications infrastructure
1. Focusing on emerging opportunities in the rapidly-evolving global software industry
2. Developing the human resource: software professionals at the cutting edge
3. Encouraging new business creation
4. Developing a supportive habitat for software startups
5. Expanding the domestic market
6. Facilitating global marketing of software
Focusing on Emerging Global Opportunities
Targeting Emerging Segments

- Competing globally in mature segments is difficult and expensive
  - In software publishing, no mfg. costs
  - Costs are amortized over market share
  - Low-price strategy doesn’t work
- Emerging software opportunities must be global plays from the beginning
- Important new niches emerge frequently
## National Software Strategies — In Retrospect

<table>
<thead>
<tr>
<th>Country</th>
<th>Software Industry Today</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Israel</td>
<td>export technology</td>
<td>military high-tech</td>
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<tr>
<td>Ireland</td>
<td>services to SW publishers</td>
<td>knowledge transfer</td>
</tr>
<tr>
<td>India</td>
<td>export software services</td>
<td>utilize existing human resources</td>
</tr>
<tr>
<td>Japan</td>
<td>Nintendo and Sony titles</td>
<td>&quot;New Hard&quot;</td>
</tr>
</tbody>
</table>
Emerging Software Niches – Some Examples

- Web portal and web-based services
- Toys: Tickle-Me-Elmo, Tamagotchi, Furby, ...
- E-commerce products and services
- Portable, wearable and home computing
- Animation, entertainment and education
- Financial services, telecommunications, consumer electronics, ...
Developing the Human Resources
Human Resources

◆ Size of the potential talent pool
  ▶ Software professionals
  ▶ Startup-savvy managers and financiers
◆ Cutting-edge software education
  Prestige of software careers
◆ English-language competence
What Is Software Talent?
A Multitude of Skills

- Analysis — needs, vision, and requirements
- Architecture — form and function
- Design — usability, construction, maintenance
- Development — craftsmanship, concentration
- Debugging & maintenance — skill, temperament
- Testing — still undervalued
- Documentation, training and support
- Project management — key to success
## Graduation Requirements

<table>
<thead>
<tr>
<th>University</th>
<th>Degree</th>
<th>Math &amp; Science</th>
<th>Computer Science</th>
<th>Theory</th>
<th>Software</th>
<th>Project</th>
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Human Resources: Some Ideas for Discussion

- Encourage education in the science and practice of software (professional schools)
- Encourage broad interactions between universities and industry
- Encourage education in the business of software
- Encourage careers in software
- Encourage lifelong learning
Encouraging New Business Creation
New Business Creation

◆ All entrepreneurs should be encouraged
  ◆ Not just high-tech startups
  ◆ Society’s attitudes about entrepreneurship factor into every entrepreneur’s decision

◆ Weighing risks and rewards
  ◆ Ownership and venture financing
  ◆ Failure and bankruptcy law
Why Startups Are Important in the Software Industry

- Innovation, risk (diversified approach)
- Speed, responding to rapid change
- Flexibility: technology, platforms, partners
- Cooperation with competitors
- Co-invention with customers
- Giving innovators a bigger piece of the pie
Forms of Software Businesses

- Software publishing
  - Tools for enterprise developers, etc.
  - Titles: “artistic software”
- Software services to business and government
  - Design, development, integration, maintenance
- Software-enabled services to business, consumers
- Outsourced services to the software publishers
  - Product localization, training and technical support
- Technology licensing and “R&D acquisitions”
Issues in Venture Capital

- **Risk sharing through equity participation**
  - Debt service by the VC firm or by the startup limits business strategies and risk taking
- **Expertise in high-risk investments**
  - Working knowledge of the industry
  - Investment selection, portfolio management
  - Networking and advice for entrepreneurs
- **Existence of good exit alternatives**
  - IPO’s and acquisitions
Government involvement reinforces low-risk, low-return model

- Governments have low tolerance for failures, even if portfolio succeeds overall
- Regulations to protect parties in inherently high-risk undertakings are problematic
- Government definitions of who qualifies for various incentives can be counterproductive
Source of Funds for Venture Capital Firms

US | Japan | Korea

- Debt
- Paid-in capital
- Partners
Types of Investment by Venture Capital Firms

- **US**: 100% Equity
- **Japan**: 50% Loans and other, 44% Convertible bonds, 6% Equity
- **Korea**: 35% Loans and other, 13% Convertible bonds, 52% Equity
High-Tech Focus of Venture Capital Firms

(Total investments in $B US)
Venture Capital: More Ideas for Discussion

- Reduce over-specific regulations on the venture capital industry
  - Structure of VC firms
  - Form of venture deals
  - Selection of investments (based on industry, firm size, age, location, etc.)
  - Level of VC involvement in operations
- Require comprehensive disclosure
- Centralize and streamline government oversight of the industry
The Impact of Bankruptcy Laws on Startup & Risk Taking

- Discourages entrance for some percentage of would-be entrepreneurs
- Limits the entrepreneur’s ability to try again after a failure
- Encourages conservative growth strategies in a dynamically changing environment
Bankruptcy Law

- Goals of bankruptcy laws differ among countries
  - Liquidation – US (Chapter 7)
  - Rescue – US (Chapter 11), India
  - Workout – Japan

- Severity of legal impact of bankruptcy differs
  - Can’t start new business until discharge – Israel
  - Can’t practice profession until discharge – Ireland
  - Just decriminalized in the past year – Korea
Bankruptcy Laws: Some Ideas for Discussion

- More access to mediation for smaller firms
- More protection for shareholders
- Protection through disclosure vs. oversight
- Re-think purpose of bankruptcy laws
  - Encourage “fresh start” attitude
  - Natural selection and recycling of resources
Developing a Supportive Habitat for Software Startups
Habitat for Software Startups

- Infrastructure: transport and telecom
  - But physical infrastructure is not enough
- Specialized firms, consultants and contractors who, like VC’s, are not just “suppliers” to startups, but also partners
- Physical, legal, and social mechanisms that promote speed in product development and in cross-firm learning about both technical and business issues
What Software Startups Need

- Experienced new hires, no training required
- Advice from more experienced business folk as well as outside technical expertise
- Specialized business functions: recruiting, marketing research, PR, accounting, ...
- Specialized technical functions: QA, website hosting, disc manufacturing, doc writing, ...
- Continued financing through life cycle
Things That Slow Things Down

- Hiring
- On-the-job training
- Government: regulation, approvals, reviews...
- Bureaucracy
- Consensus-based decision making
- Bank loans
- Import substitution strategies
- Doing it all yourself, vs. partners and outsourcing
- Perfect quality
- Risk reduction strategies
Habitat for Software Startups: Some Ideas for Discussion

- Nurture private habitat support firms, independent contractors, and consultants
- Establish forums for cooperative learning among entrepreneurs and among technical innovators
- Facilitate movement of people between firms
Stimulating Domestic Demand
Domestic Demand is Important for Software Startups

- Software services is an important segment in Korea and a natural market to develop
- Prestigious customers give credibility to startups and legitimacy to entrepreneurs
- Local customers give better feedback
  - Features, marketing, competitors
  - Enterprise publishers need state-of-the-art beta sites that can co-invent new features
  - May filter firms, before larger investments
- Acquisition as an additional exit strategy
- A training ground for new entrepreneurs
Legacy Attitudes — Not Just Legacy Systems

- Information Technology was not originally introduced as a strategic weapon.
  - Clerical: Efficiency, labor reduction, reports
  - Manufacturing: speed, capacity, labor, quality
  - Office: communication, global coordination, BPR
- Organizational, technical and psychological artifacts remain as barriers to re-deploying IT assets to take a strategic role in the business.
- The most important misconceptions involve software.
Stimulating Domestic Demand: Some Ideas for Discussion

- Government procurement procedures
  - Outsourcing
  - Software startup set-asides
- State-of-the-art government systems initiatives
- Stimulating strategic innovation in major industrial and financial firms
Global Software Marketing
Selling Software Globally

- There are very few examples of global software players outside of the US
- Software marketing is unique, and key
  - Deep knowledge of technical state-of-the-art is required
- Mature segments have high barriers and low margins
  - Opportunities exist in emerging markets
Software Marketing is Different

- No manufacturing phase – product is never “defined”
- Competitive products change rapidly
- Release management: bug & feature list prioritization
- Specific knowledge of domain & users’ environments
- Interactions with platform, DB, and tool vendors, standards
- Interaction with customer doesn’t end with sale: selling services, technical support, user groups, ...
- Beta & reference site management – credibility management
- RFPs, sales presentations, analyst interviews, trade show presentations, etc. require technical knowledge
- Support a complex sales process: channels, partners, platforms, industry verticals, geography, etc.
Developing Global Strategies: Some Ideas for Discussion

- Niche strategies may be the most effective use of limited resources
  - Software for industries where Korea is strong
- Consider technology licensing and sales
  - Israeli-style trade consulate
- Increase activity in Silicon Valley and other software centers
  - Gathering business intelligence, finding partners
- Exploit expatriate network
  - Encourage early career experience abroad
Encouraging Korean Software Entrepreneurism: Summary

- Identify emerging segments
  - Platform & marketing expertise
- Capitalize on technology strengths in existing industries
- Deregulate for market-driven new business creation
- Develop the human resource – it is the only resource in the software industry