Platforms, ecosystems, and the future of software

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About Rubicon

- Help high tech organizations win markets through business and market strategy
  - Since 1999
  - Practices: define, deliver, defend, optimize
About me

- **Macintosh software developer**
- **Apple**
  - Director of Mac platform marketing
  - Director of customer & competitive analysis
- **Palm/PalmSource**
  - VP of product planning
  - Chief competitive officer
Everybody wants a platform
Where did this "platform" thing come from in the first place?
Agenda

• A quick history of software platforms
• What makes a platform win?
• Where will the industry go next?
We remember hardware better than software

- What's the first electronic computer?
  - ENIAC, 1946
What was the first business computer?
J. Lyons & Co.

- 30,000 employees
- 150m meals a year
- 36 miles of Swiss roll a day
- ...all on paper
1951: The first business computer

- **Lyons LEO, 1951**
  - Paid Cambridge $5k
  - 5,000 square feet, 4k of memory weighing half a ton
  - Payroll, inventory, order management...
    - Processed an employee's wages in 1.5 seconds (vs. 8 minutes)

- **Lyons spun out as a computer company**

David Caminer, the first business app programmer / systems analyst
Software was synonymous with hardware

- First verified use of term "software"
- John Tukey, 1958
  - Statistician
    - Princeton and Bell Labs
  - Helped design the U2
  - Popularized the term "bit"
What was the first third party app?
The first third-party app

- **Applied Data Research Autoflow, 1964**
  - An automatic flowcharting program
  - Also the first patented software
  - RCA first, then IBM
  - IBM: free clone
  - US government antitrust suit, 1969
  - January 1, 1970: IBM unbundles
The first third-party app

- **Martin Goetz**
  - Project Manager, Autoflow
  - Holder of first software patent

- **Mike Guzik**
  - Lead programmer, Autoflow

*Computerworld, June 1968*
1970s: Rise of the killer app
1979: VisiCalc

- "Visicalc could some day become the software tail that wags (and sells) the personal computer dog."
  - Ben Rosen, later the founder of Compaq, writing as an analyst with Morgan Stanley

*Dan Bricklin at the West Coast Computer Faire, May 1979*
1980s: Separation of OS from hardware

- **August 1980**
  - IBM signs Microsoft to supply the OS for its new computer

- **August 1981**
  - IBM PC ships

- **1982**
  - Microsoft licenses MS-DOS to 50 hardware manufacturers
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The web discovers APIs

- Mashups
Mobile discovers APIs

- Intense interest due to recent successes of a certain mobile device
Mobile discovers APIs

- Intense interest due to recent successes of a certain mobile device

![Graph showing one-year growth in registered Palm developers]

- 1998: 0
- 1999: 25,000
"That's unfair"
Reality: Most platforms fail
Definition of failure depends on your goal

- Give me a marketing boost over the competition
- Get developers to add features I don't have time to develop
- Address user problems and sub-markets that neither of us could have tackled alone

Need for developers
- Don't care
- Care somewhat
- Care a lot
What motivates developers?
How platforms fail

Almost impossible to monetize

Apps hard to find
Store financials outrageous

Inconsistent APIs (raises cost)
Very hard to get on device
The PC and Windows

• The Rise
  – IBM drives belief in large user base
  – Hardware architecture permits powerful apps (for the time)
  – Open APIs
  – Clone licensing drives additional growth; virtuous circle

• The Decline
  – Microsoft preys on successful software developers
  – Intel and Microsoft can't coordinate innovation
The less friction, the more apps

- **Easy to develop**
  - Powerful APIs, great documentation and support, uses existing tools/languages, easy to debug

- **Easy to sell**
  - No artificial barriers, easy discovery, marketing, installation, billing, reasonable financials

- **Large user base**
  - Or the belief that it'll get large
# Pluses and minuses of iPhone ecosystem

<table>
<thead>
<tr>
<th></th>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APIs</strong></td>
<td>Very capable</td>
<td>App functionality limited</td>
</tr>
<tr>
<td><strong>Development</strong></td>
<td>Familiar if you're a Mac developer</td>
<td>Nonstandard; Java and Flash missing</td>
</tr>
<tr>
<td><strong>Store</strong></td>
<td>Built in, pretty good terms</td>
<td>Arbitrary screening by Apple, price pressure</td>
</tr>
<tr>
<td><strong>User base</strong></td>
<td>Perception of world domination, high traffic seen by websites</td>
<td>(Will it continue to grow?)</td>
</tr>
</tbody>
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The ultimate ecosystem doesn't yet exist

• **Advantages of an integrated platform**
  – Great discovery, billing, support, APIs

• **Advantages of web app development**
  – Lots of Ajax-style tools, instant deployment, huge user base, write once run anywhere
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Opportunity in disaggregation

- Computers
  - Software that lets computers do multiple tasks
    - Independent software
  - OS platforms separated from hardware
    - Platforms separated from OS
"The Network is the Computer"

Application $\rightarrow$ Solaris or Java $\rightarrow$ Sparc servers

Application $\rightarrow$ Windows $\rightarrow$ PC hardware
Problems

- Latency
- Richness of APIs
- Access to on-device features and data

Mobile makes it worse
- Limited bandwidth
- Limited capacity
- Limited coverage
- High latency
- High cost
- Battery life
Next: The OS disaggregates

Application  Local OS  Local hardware
The Meta-Platform is the Computer

Cloud servers

Cloud components

Application

Local OS

Local hardware
Remember

• If you're a developer
  – "Which platform gives me the best long-term business proposition?"

• If you're a platform vendor
  – "How can I create a better ecosystem than the other guy?"

• Opportunity: Disaggregating the OS
  – Balancing local and cloud OS services
Discussion

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Win Markets

Trusted Advisors to high-tech firms seeking to transform their visions into strategies, strategies into plans, and plans into results.

Practices:
Define / Design / Defend / Optimize