

Outsourcing Innovation: A Guide for Start-ups

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Introduction

Research Motivation and Question

Industry Trends

- Globalization, NPD, examples of outsourced innovation

Framework of Outsourcing Innovation

Start-up Guide:

- Aligning your business
- Strategic selection of partners
- Agile innovation
- Rapid prototype solutions
- Quick-turn production

- **Small firms account for 99.7% of all businesses (SBA)**
- **Small businesses account for 51% of GDP (U.S.)...10% of GDP is related to new venture creation (Global Insight)**
- **New ventures are more innovative per employee (actually 13 times more innovative than employees at large, established firms).**
- **These ventures are small – the average new tech. firm has an average of 8 employees (including founders)**

Small Business by the Numbers (Washington, DC: U.S. Small Business Administration), 2004. Link: <http://www.sba.gov/advo/stats/sbfaq.pdf>

- **Approximately 50% of new firms do not survive past four years (Headd, 2003)**
- **40% of all new products and services ultimately fail (Adams, 2004)**
- **Competitive pressures are forcing firms to compress development duration and cost concurrently with increased variety**
- **Research shows that in larger companies, the development process is key to ultimate product success**
- **Missteps during development and launch can be disastrous for the resource constrained firm...**

How can new ventures best leverage outside resources in innovation development - for efficient and effective outcomes - given their human and financial capital constraints?

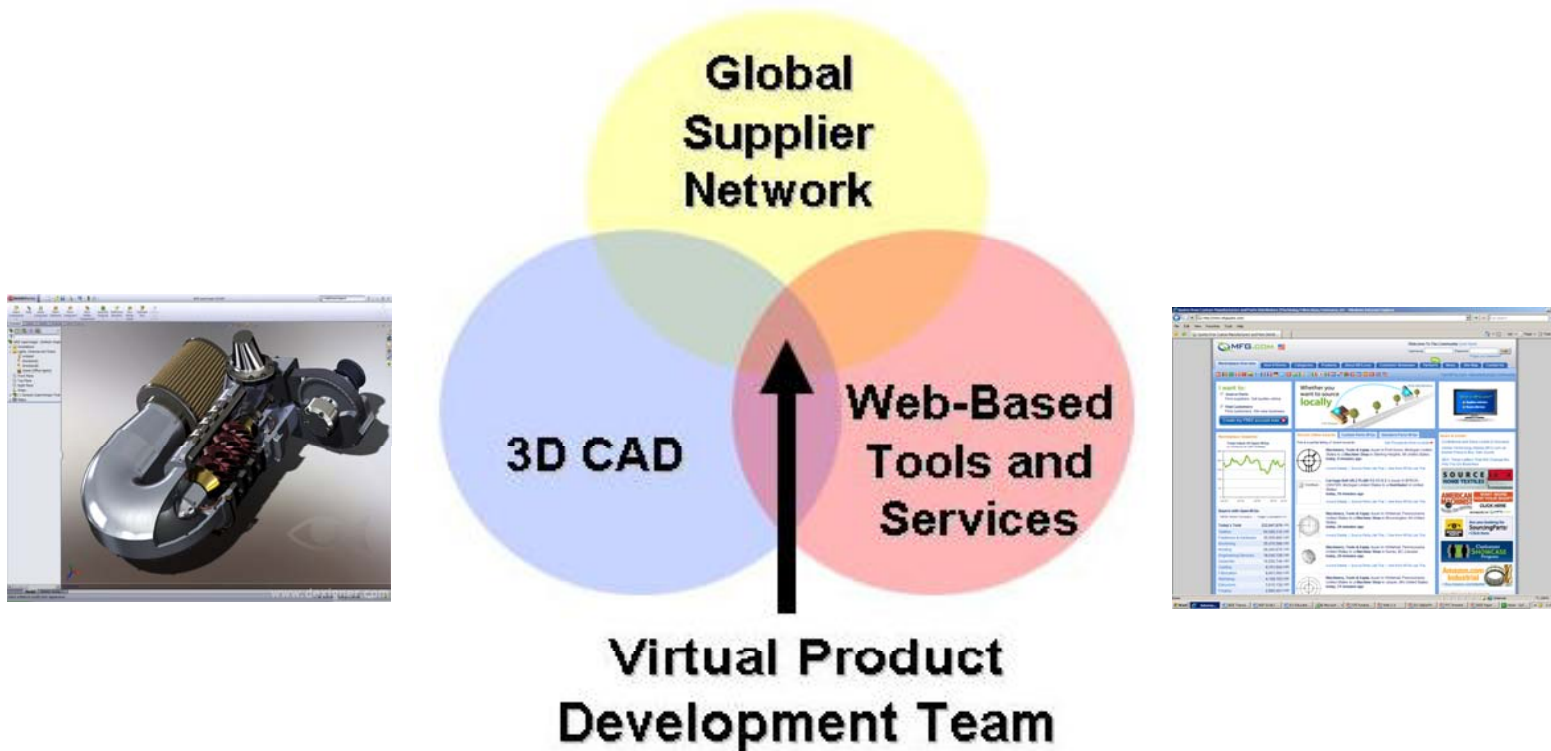
- **To answer this question, we performed in-depth case analysis and empirical research on 51 firms**
- **A majority of these ventures outsource critical development tasks**
- **Vendors and partners enable near software-like agile, quick-turn development**

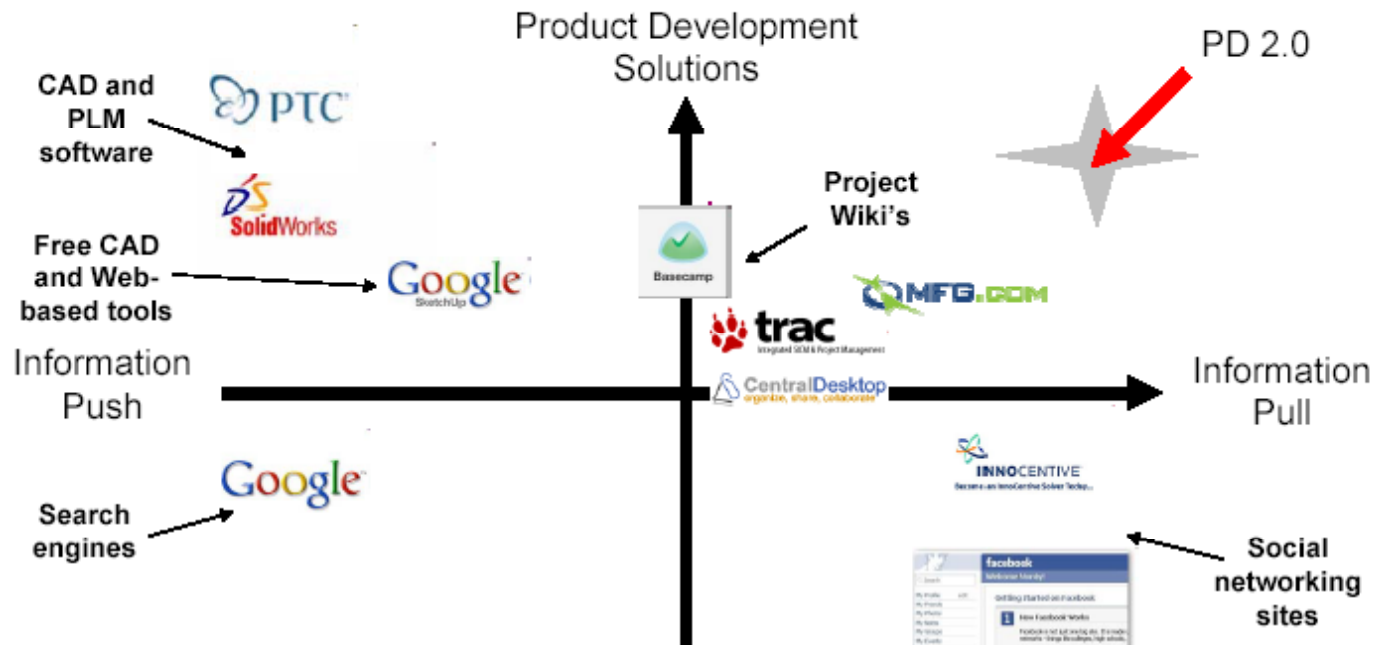
Globalization has Changed NPD



- **Off-shoring and outsourcing has dramatically altered how products are designed**
- **Set-up costs are now a much smaller percentage of total project cost (33% - 50% lower tooling costs)**
- **Components are low cost and commoditized**
- **Resources can be found, engaged, and managed virtually**
- **Extremely quick turnaround on prototypes (including hardware and software)**

- The integration of the Internet and Web-based tools, 3D CAD, and has allowed a global network of suppliers and manufacturers companies to develop products at much faster rates using less resources and a virtual development team (Eppinger and Chitkara, 2006)

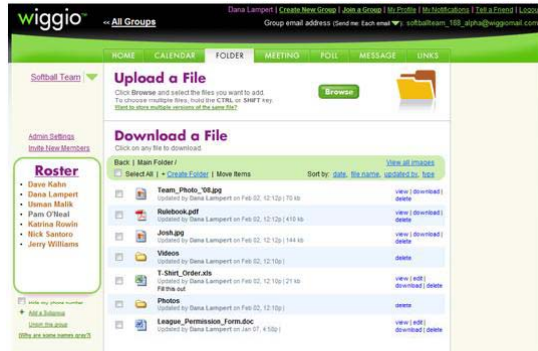




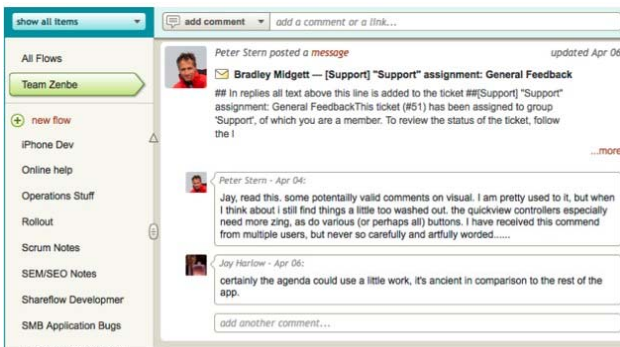
Technology-based new ventures are shifting the paradigm of product development from a 'push' to a 'pull' system where communities can actively drive input to the project, rather than respond to active requests...

New Product Development 2.0

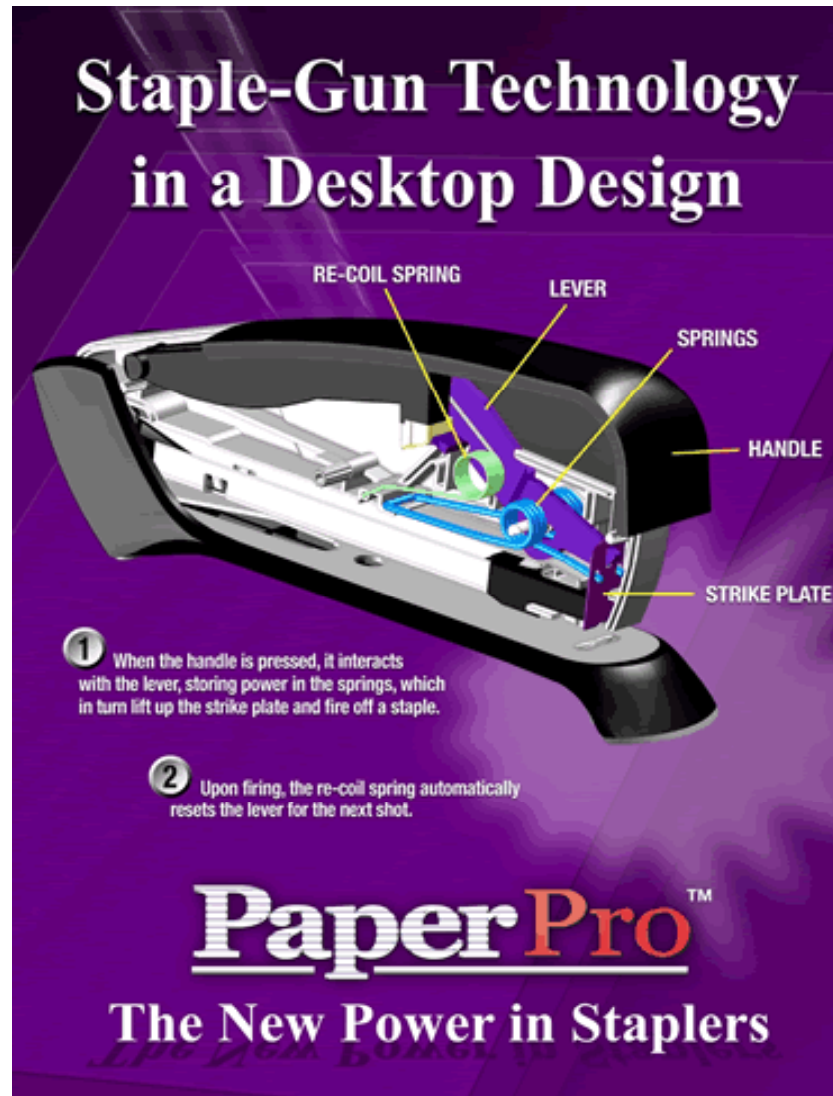
Tools



Collaboration



Case Study: PaperPro[®]



- Small development team, led by an outside inventor
- Global development and component sourcing
- Stapler technology and intellectual property a main focus



- **Development and component costs, 1000 model 20-sheet stapler**

PaperPro					
Part Name	Unit Cost	Type	% of Total BOM Cost	Tooling Cost	Source
Left housing	\$ 0.25	Injection Molded/Cast Part	13%	\$ 27,000.00	China
Right housing	\$ 0.25	Injection Molded/Cast Part	13%	\$ 27,000.00	China
Base	\$ 0.22	Injection Molded Part	11%	\$ 20,000.00	China
Handle	\$ 0.20	Injection Molded Part	10%	\$ 10,000.00	China
Lever	\$ 0.16	Stamped Part	8%	\$ -	China
Spring	\$ 0.10	Stamped Part	5%	\$ -	China
Recoil Spring	\$ 0.14	Stamped Part	7%	\$ -	China
Striker	\$ 0.08	Stamped Part	4%	\$ -	China
Staple Track	\$ 0.14	Stamped Part	7%	\$ -	China
Staple Track Back-stop	\$ 0.08	Injection Molded Part	4%	NA	China
Staple Track Spring	\$ 0.08	Purchased Part	4%	\$ -	China
Staple Track Advance	\$ 0.08	Stamped Part	4%	\$ -	China
Absorber	\$ 0.04	Injection Molded Part	2%	\$ 1,000.00	China
Anvil	\$ 0.16	Stamped Part	8%	\$ -	China
	\$ 1.98		100%	\$ 85,000.00	
Total Development Cost	\$ 10,000.00				

**Founder and inventor worked for equity,
 manufacturing partnership lowered total cost...**

- Today, the company is a worldwide market leader



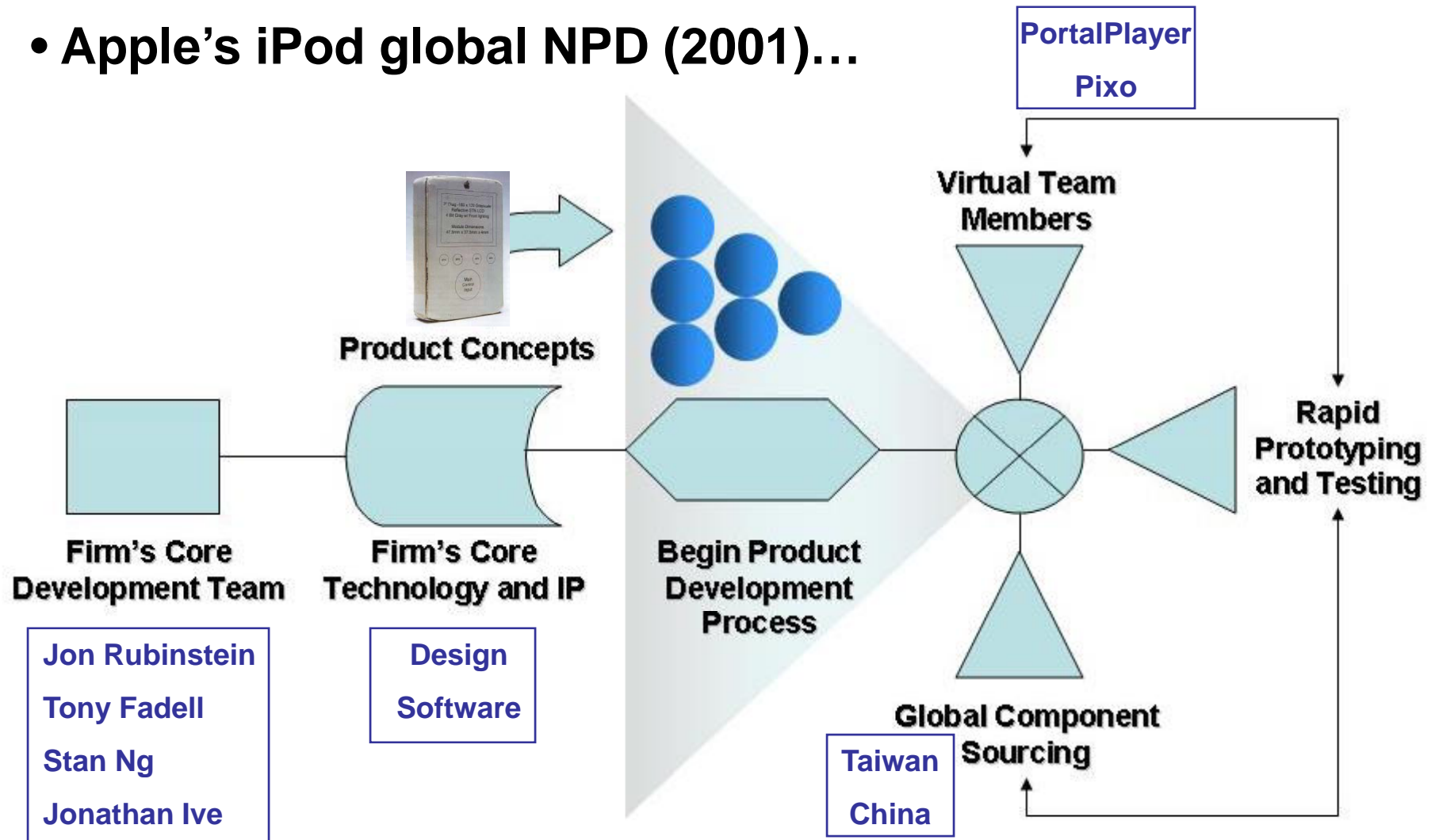
Apple – New Venture-like Innovation



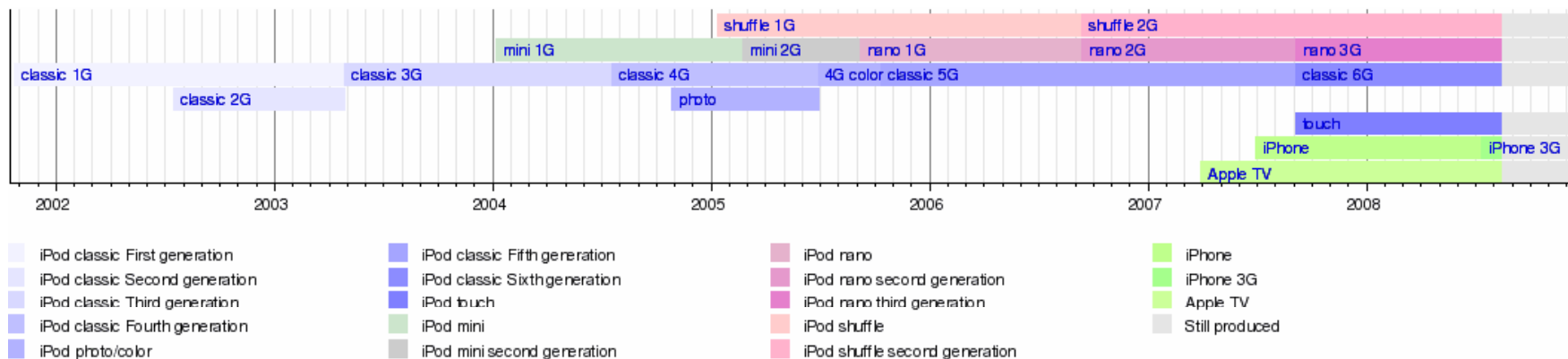
- Apple's iPod's development was done by a small virtual development team
- All iPod's are *Designed in California, Made in China/Taiwan*
- Focus is on industrial design, functionality, and branding
- Quick development lead-time and new product introduction – the NPD process is a *platform* for Apple
- Extremely successful product line...



• Apple's iPod global NPD (2001)...

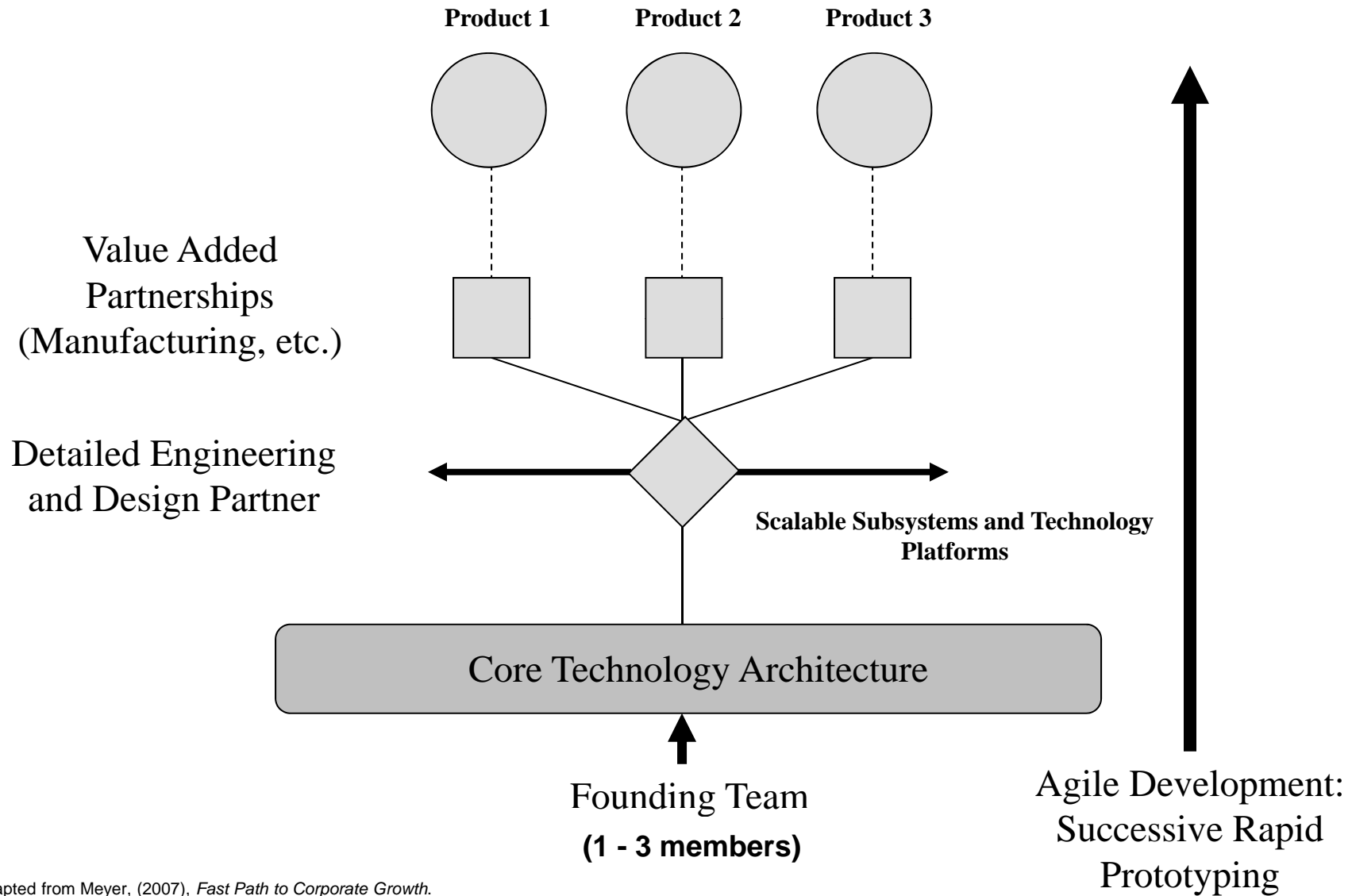


Apple's iPod... fast cycles of new variants and models...



Source: <http://en.wikipedia.org/wiki/iPod>

Innovation Framework

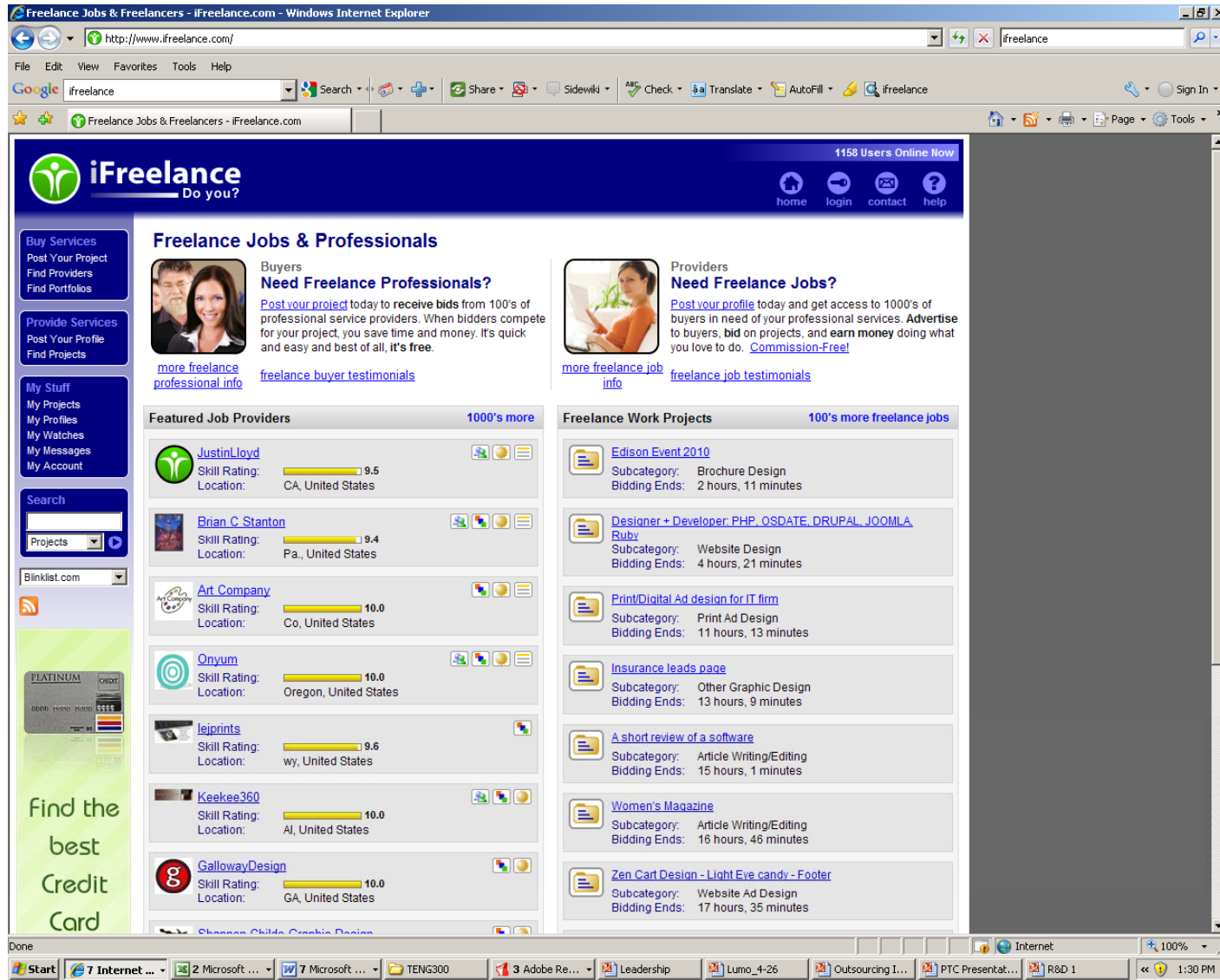


Adapted from Meyer, (2007), *Fast Path to Corporate Growth*.

Outsourcing Innovation: A Guide for Start-ups

- **Look at selectively filling key positions with part-time resources**
- **Reduces fixed costs while growing your full-time staff**
- **Stay small, flexible, and look for resources on the Web**
- **Implement the latest technology tools (project Wiki's, Google Wave, etc. - enabling NPD '2.0')**
- **Focus on fostering communication while maintaining knowledge discipline**

Example: Aligning Your Business



The screenshot shows the iFreelance website interface. The browser window title is "Freelance Jobs & Freelancers - iFreelance.com". The address bar shows "http://www.ifreelance.com/". The search bar contains "ifreelance".

The website header includes the iFreelance logo with the tagline "Do you?" and navigation links for home, login, contact, and help. It also indicates "1158 Users Online Now".

The main content area is divided into several sections:

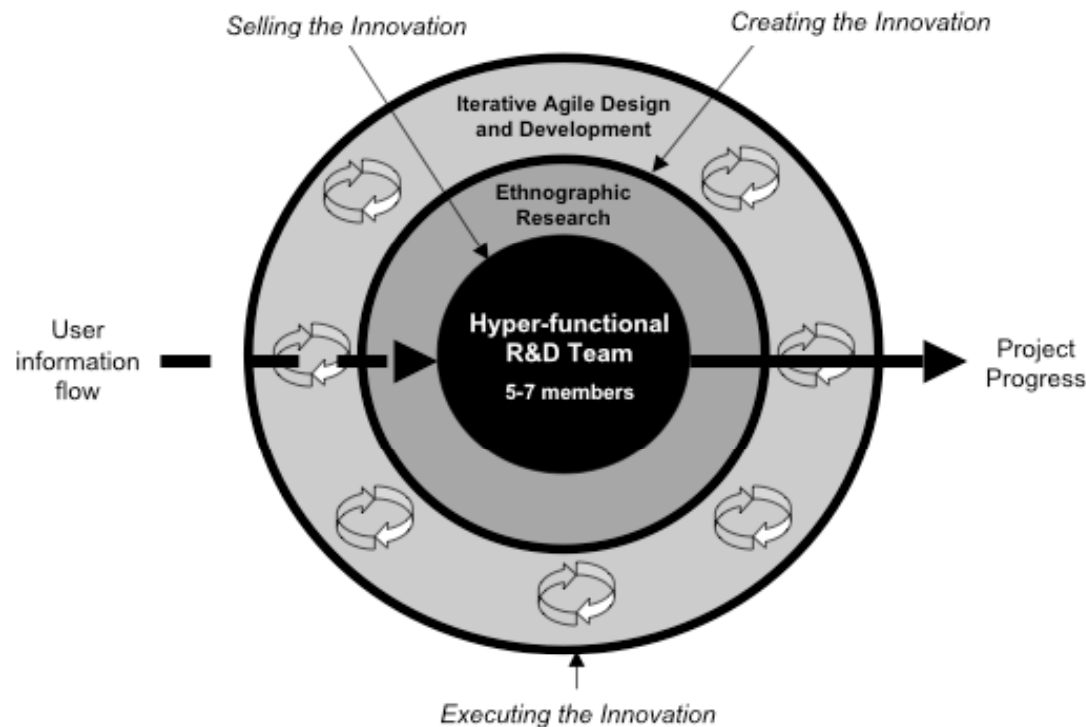
- Buyers Need Freelance Professionals?**: Encourages posting projects to receive bids from 100's of professional service providers. Includes links for "more freelance professional info" and "freelance buyer testimonials".
- Providers Need Freelance Jobs?**: Encourages posting profiles to get access to 1000's of buyers. Includes links for "more freelance job info" and "freelance job testimonials".
- Featured Job Providers**: Lists several providers with their skill ratings and locations:
 - JustinLloyd: Skill Rating: 9.5, Location: CA, United States
 - Brian C Stanton: Skill Rating: 9.4, Location: Pa., United States
 - Art Company: Skill Rating: 10.0, Location: Co, United States
 - Onyum: Skill Rating: 10.0, Location: Oregon, United States
 - lejprints: Skill Rating: 9.6, Location: wy, United States
 - Keekee360: Skill Rating: 10.0, Location: AI, United States
 - GallowayDesign: Skill Rating: 10.0, Location: GA, United States
- Freelance Work Projects**: Lists several projects with their subcategories and bidding end times:
 - Edison Event 2010: Subcategory: Brochure Design, Bidding Ends: 2 hours, 11 minutes
 - Designer + Developer: PHP, OSDATE, DRUPAL, JOOMLA, Ruby: Subcategory: Website Design, Bidding Ends: 4 hours, 21 minutes
 - Print/Digital Ad design for IT firm: Subcategory: Print Ad Design, Bidding Ends: 11 hours, 13 minutes
 - Insurance leads page: Subcategory: Other Graphic Design, Bidding Ends: 13 hours, 9 minutes
 - A short review of a software: Subcategory: Article Writing/Editing, Bidding Ends: 15 hours, 1 minutes
 - Women's Magazine: Subcategory: Article Writing/Editing, Bidding Ends: 16 hours, 46 minutes
 - Zen Cart Design - Light Eye candy - Footer: Subcategory: Website Ad Design, Bidding Ends: 17 hours, 35 minutes

The left sidebar contains navigation options like "Buy Services", "Provide Services", "My Stuff", and "Search". The bottom of the browser window shows the Windows taskbar with various open applications and the system clock at 1:30 PM.

- **Look for vendors that provide more than discrete services**
- **Partners should connect capital, channel partners, and customers (the 3 C's)**
- **These partners are often industrial design firms, manufacturers, key component vendors, and sales channels**
- **Entrepreneurship literature notes the importance of network development on successful outcomes (Lechner, et al. (2006))**



- Agile development, once reserved for software, is increasingly being adopted by other industries
- Quickly build, test, improve, and test again



Meyer, M.A., Marion, T.J., (2010), "Innovating for Effectiveness: Lessons from Design Firms," *Research-Technology Management*, accepted for publication.

Example: Agile Development



Active Intelligence | Information Access | Enterprise Search Software - Windows Internet Explorer

http://www.attivio.com/

File Edit View Favorites Tools Help

Google attivio Search Share Sidewiki Check Translate AutoFill attivio Sign In

Active Intelligence | Information Access | Enterprise S...

SEARCH

RESOURCES PLATFORM INDUSTRIES & SOLUTIONS ATTIVIO PARTNERS BLOG SUPPORT

Unified Information Access: The Attivio Impact

On-demand insight is critical to the success of your business, but the knowledge you need is tucked away in separate silos of unstructured content and structured data. Assembling it often requires significant manual effort or precious IT resources, and by the time it's combined and analyzed, it has shed context and lost immediacy. To identify new opportunities that maximize revenue; reduce implementation, support and infrastructure costs; improve customer satisfaction and retention; and drive competitive advantage, you need to unify and automate delivery of all the information that is essential to your business. This is the Attivio Impact.

Attivio's Active Intelligence Engine™ rapidly delivers comprehensive, high-value insight the way you want it, when you want it — regardless of what applications or sources you rely on. AIE's approach to unified information access delivers core capabilities offered separately by enterprise search, business intelligence, data warehousing, process automation and analytics to bring depth and agility to business applications and websites. Today's global business imperatives — uncovering insights that drive innovation and agility, making smarter decisions faster and mitigating risk — have made Attivio vital to our customers' growth and success.

Intelligent Active Agile

CIOs & Technologists Business Champions Technology Vendors Partners

NEWS & HAPPENINGS

Newsroom

Netezza Teams With Attivio To Address Unified Information Access

Tuesday, June 22, 2010 - Company Release
BOSTON, MA - ENZEE UNIVERSE - Netezza Corporation (NYSE: NZ), the global leader in data warehouse, analytic and monitoring appliances, and Attivio Inc., the...

« Prev | 1 of 10 | Next »

FEATURES

lokrii

ATTIVIO BLOG

Sid Probstheim
CTO
Attivio

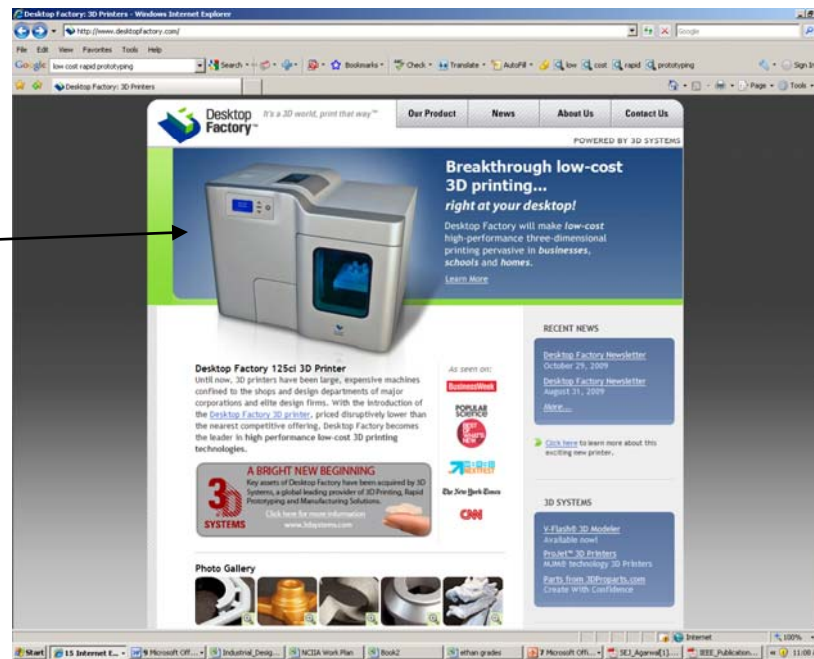
Get Connected

http://www.attivio.com/active-intelligence.html

Start 7 Internet... 2 Microsof... 7 Microsof... TENG300 3 Adobe R... Leadership Lumo_4-26 Outsourcing... PTC Present... R&D 1 New Ventur... 100% 1:43 PM

- Prototyping costs have dropped rapidly
- Nearly all types of prototypes, from circuits to metal housings can be fabricated in hours
- These are key enablers for Agile Development

\$4,995.00



Example: Rapid Prototyping Solutions

Plastic Parts



Metal Fabrication



Electronics



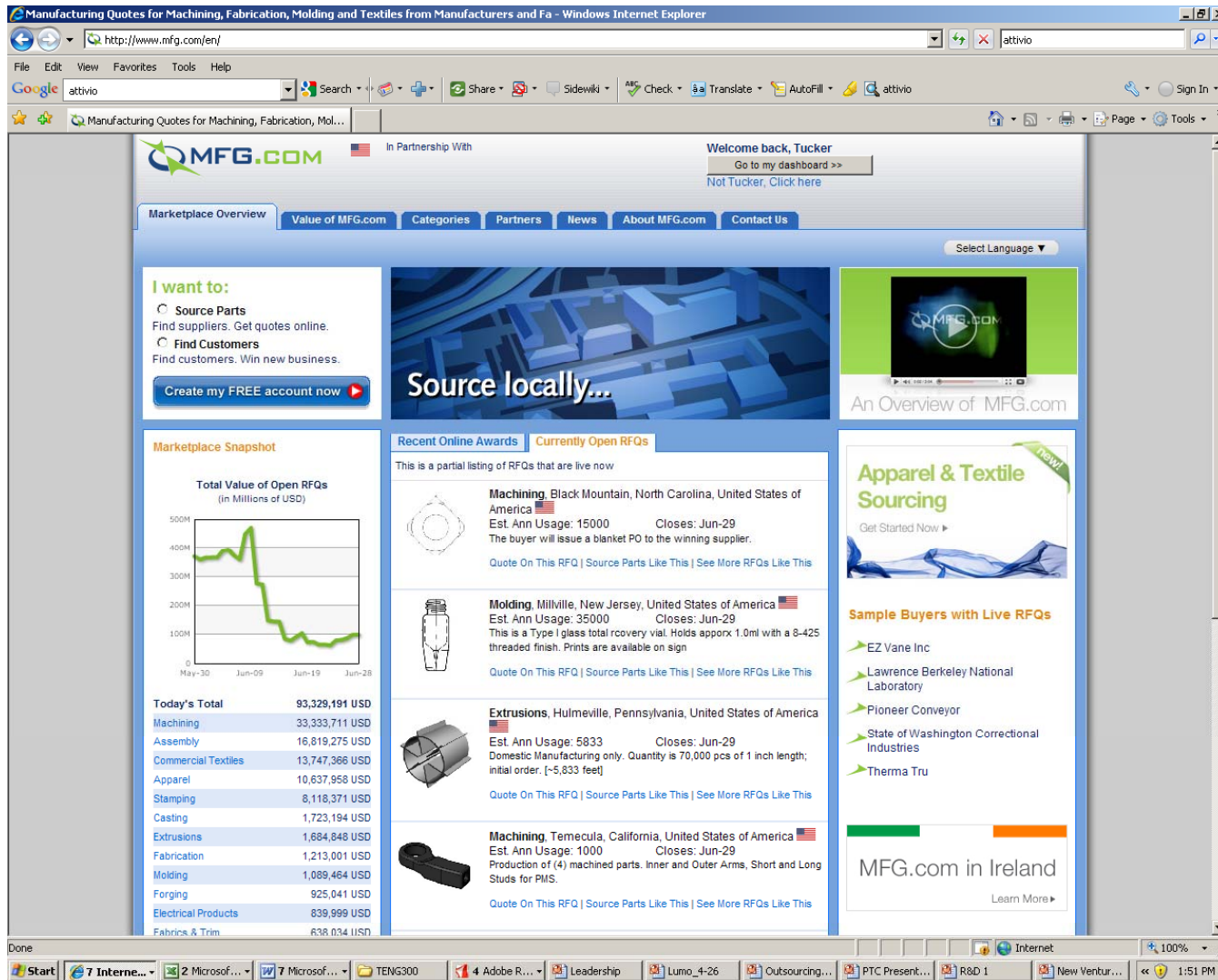
Software



Example: Rapid Prototyping Solutions

QuickTime™ and a
decompressor
are needed to see this picture.

- **Beta test production-level components quickly, and for less capital expenditures than full-production ramp**
- **Design changes can then be made based on customer feedback – prior to full launch and capitalization**
- **Global sourcing tools can help find and select these vendors**
- **On-shore partners remain a good option**



The screenshot shows the MFG.com website interface. At the top, there's a navigation bar with 'Marketplace Overview', 'Value of MFG.com', 'Categories', 'Partners', 'News', 'About MFG.com', and 'Contact Us'. A 'Welcome back, Tucker' message is visible in the top right.

Marketplace Snapshot

Total Value of Open RFQs (in Millions of USD)

Category	Value (USD)
Today's Total	93,329,191 USD
Machining	33,333,711 USD
Assembly	16,819,275 USD
Commercial Textiles	13,747,366 USD
Apparel	10,637,958 USD
Stamping	8,118,371 USD
Casting	1,723,194 USD
Extrusions	1,684,848 USD
Fabrication	1,213,001 USD
Molding	1,089,464 USD
Forging	925,041 USD
Electrical Products	839,999 USD
Fabrics & Trim	638,034 USD

Currently Open RFQs

- Machining, Black Mountain, North Carolina, United States of America**
Est. Ann Usage: 15000 Closes: Jun-29
The buyer will issue a blanket PO to the winning supplier.
[Quote On This RFQ](#) | [Source Parts Like This](#) | [See More RFQs Like This](#)
- Molding, Millville, New Jersey, United States of America**
Est. Ann Usage: 35000 Closes: Jun-29
This is a Type I glass total recovery vial. Holds approx 1.0ml with a 8-425 threaded finish. Prints are available on sign
[Quote On This RFQ](#) | [Source Parts Like This](#) | [See More RFQs Like This](#)
- Extrusions, Hulmeville, Pennsylvania, United States of America**
Est. Ann Usage: 5833 Closes: Jun-29
Domestic Manufacturing only. Quantity is 70,000 pcs of 1 inch length; initial order. [-5,833 feet]
[Quote On This RFQ](#) | [Source Parts Like This](#) | [See More RFQs Like This](#)
- Machining, Temecula, California, United States of America**
Est. Ann Usage: 1000 Closes: Jun-29
Production of (4) machined parts. Inner and Outer Arms, Short and Long Studs for PMS.
[Quote On This RFQ](#) | [Source Parts Like This](#) | [See More RFQs Like This](#)

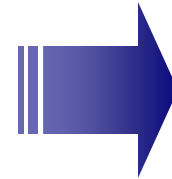
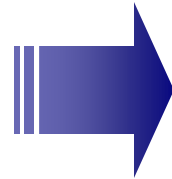
Apparel & Textile Sourcing
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Sample Buyers with Live RFQs

- EZ Vane Inc
- Lawrence Berkeley National Laboratory
- Pioneer Conveyor
- State of Washington Correctional Industries
- Therma Tru

MFG.com in Ireland
[Learn More ▶](#)

Example: Quick-Turn Manufacturing



Thank you!

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