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Tech Transfer Challenges

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LEADING INTELLIGENCE INTEGRATION

The Value of Integrated Intelligence

	<i>Knowledge</i>	<i>Speed</i>	<i>Precision</i>	<i>Lethality (Air 2 Gnd OPS)</i>
ODS	3200 ISR Sortie Hours	7 Mos Buildup	10 % PGMs ~ 30 SOF Teams	10 % Integ Ops 4 Acft/Tgt
OIF	1700 ISR Sortie Hours	< 3 Mos Buildup	70 % PGMs ~ 100 SOF Teams	90 % Integ Ops 1 Acft/4 Tgt
RESULTS	3X Info Half of the Hours ↓ Footprint	↓ Footprint # Ships Msn Achieve t ↑ Speed of Mnvr	↑ Precision Decisions Collat Dam ↓ RQD Ord	↑ Economy Of Force ↓ Heavy Ord Rqmts

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Mission Spectrum



Hard Targets through Nation Building & Stabilization



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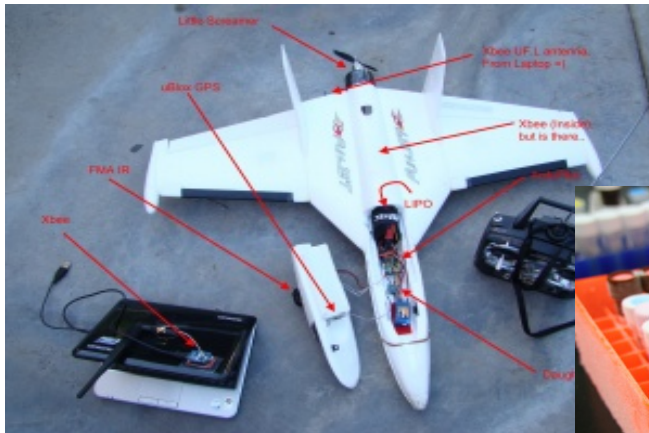


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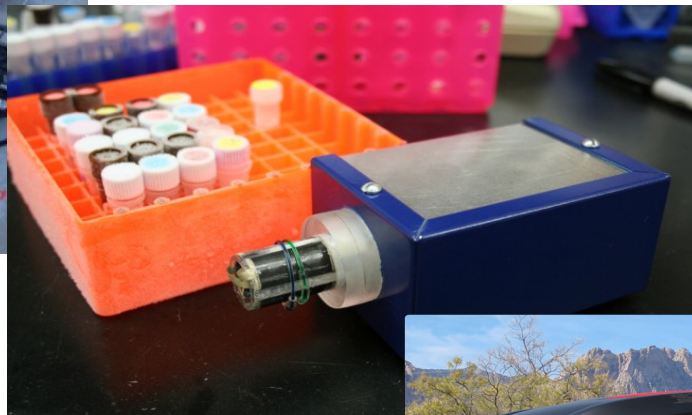
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Democratization of Technology



diydrones.com



lava-amp.com



local-motors.com



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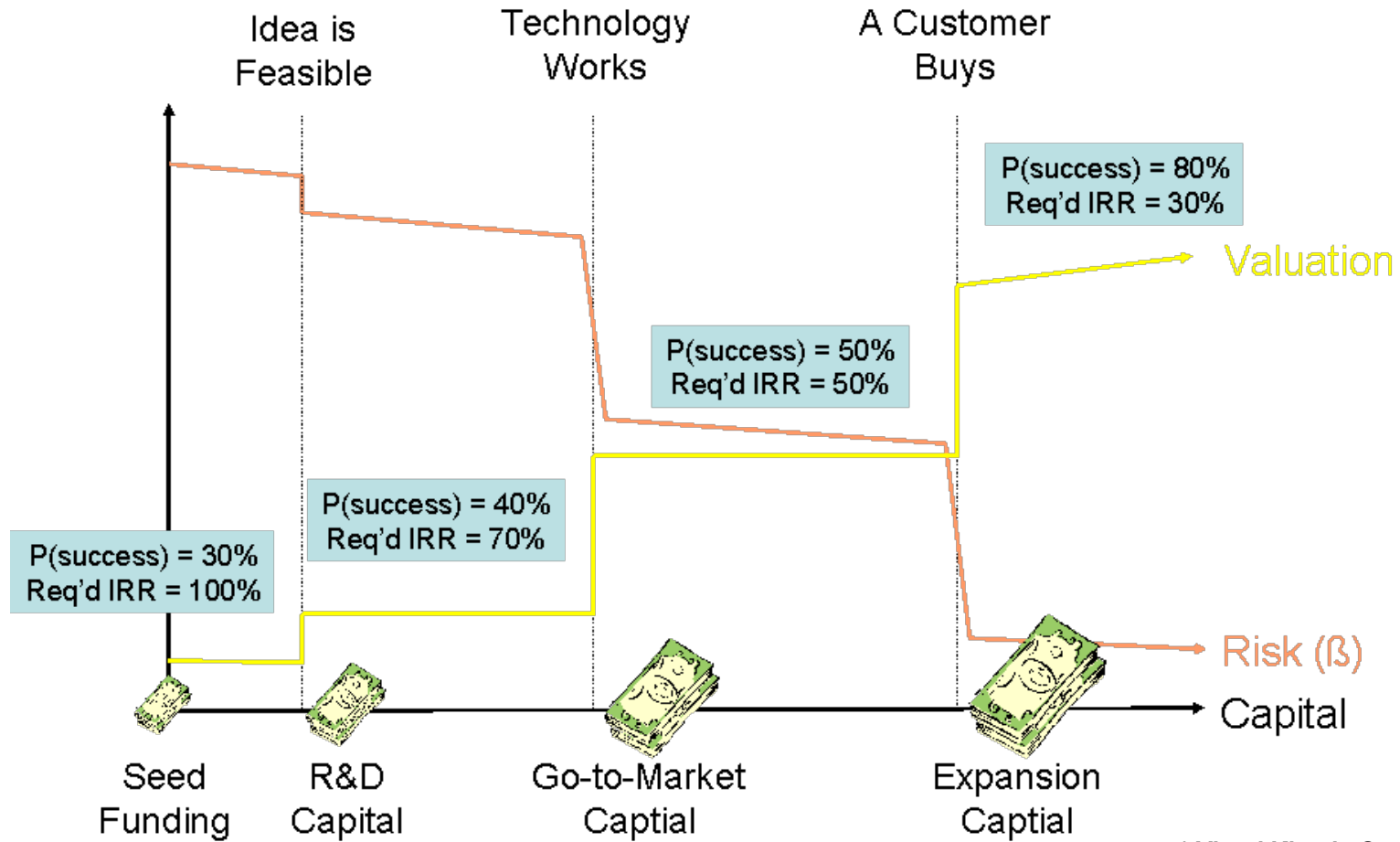


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Technology Production*



* Vinod Khosla Capital Model

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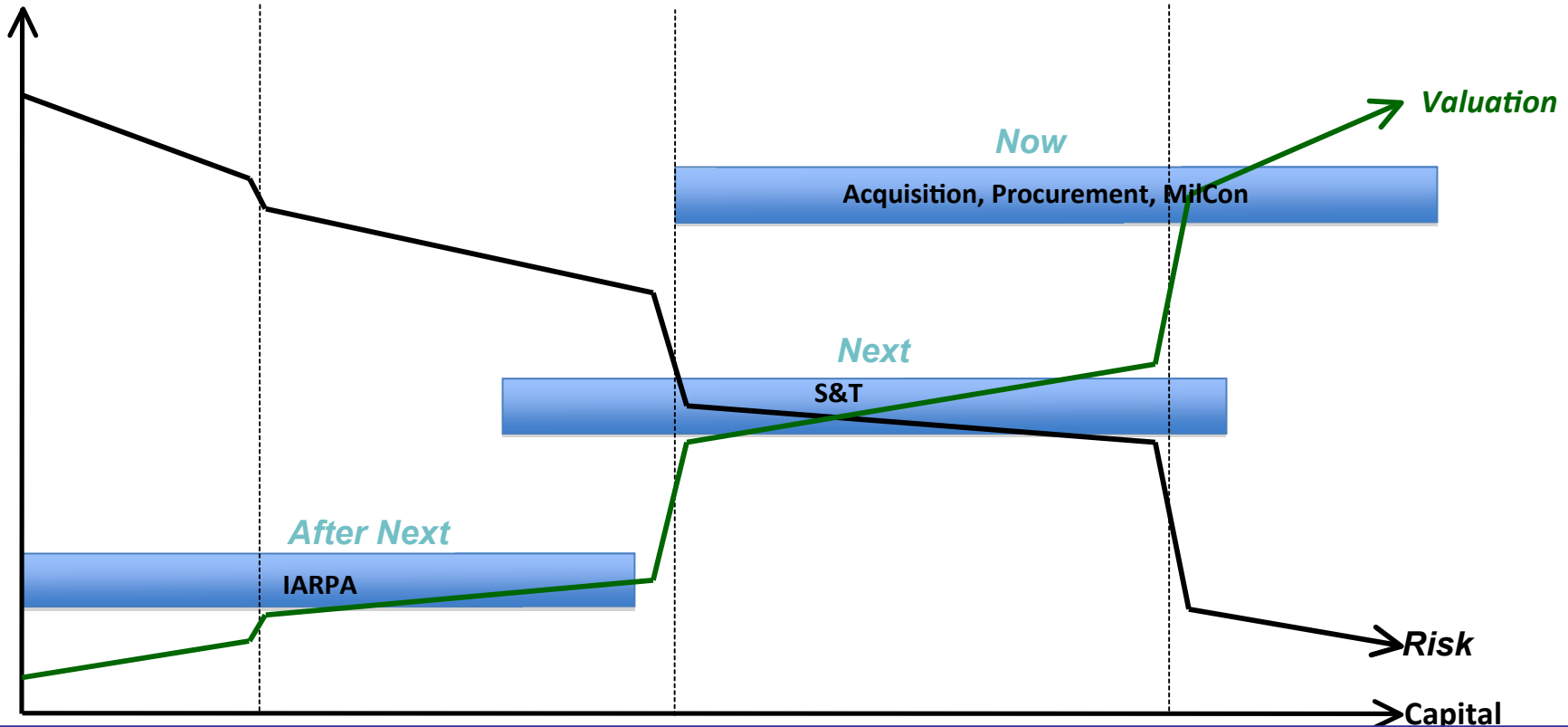
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AT&F Technology Products

Idea is Feasible

Technology Works

A Customer Buys



Catalyze delivery of innovative technology-based capabilities solving intelligence challenges.

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Technology Lifecycle



Heavy Metal



Information Technology



Low Production, Miniaturized

<p>Business Characteristics</p> <ul style="list-style-type: none"> • Austere Deployment Environments • Fragile Industrial Base • Operational Failures Irrecoverable • High Systems Engineering Complexity 	<ul style="list-style-type: none"> • Forgiving Deployment Environments • Robust industrial base • Operational Failures Acceptable or Maskable • Medium Systems Engineering Complexity 	<ul style="list-style-type: none"> • Clandestine Deployment Environments • Boutique Industrial Base • Operational Failures Impact Reputation • Low Systems Engineering Complexity
<p>Lifecycle Characteristics</p> <ul style="list-style-type: none"> • Multi-year Acquisition Cycles (~10+ yrs) • Multi-year Production Cycles • Rigorous Development • \$B • Long-lead R&T (e.g., 1st 3 years of 10 year effort) 	<ul style="list-style-type: none"> • 18 - 24 Month Production Cycles • Productivity “epochs” (Client/Server -> Web -> Collaboration -> Services) • Agile development • \$M • Mid- & Long-Lead R&T Mix (e.g., min of 3-4 yrs in front of need) 	<ul style="list-style-type: none"> • Custom Development • \$ M • Mid-lead R&T Mix (e.g., min of 2-3 yrs in front of need)



Sample IT Investment Strategy

Lead/Influence

- **Exploitation:** Pattern discovery, context recognition, inferencing
- **Video/Motion Imagery:** Algorithm development, tagging & indexing streaming video
- **Large Data:** Both big static datasets and streaming media
- **Human Language Technology:** spoken & written processing
- **Trust in software, platforms & networks:** Support net-centric, multi-domain ops

Adopt/Adapt

- **Computer Architecture/Cloud Computing:** Distributed processing and storage, quantum
- **Visualization:** Data and metadata visualization
- **Cognitive systems:** Image and pattern analysis, integration of sound and touch, speech cognition
- **Knowledge Management:** Strategies & practices to gather, organize, analyze and share organizational insights & experiences

.....in the context of.....

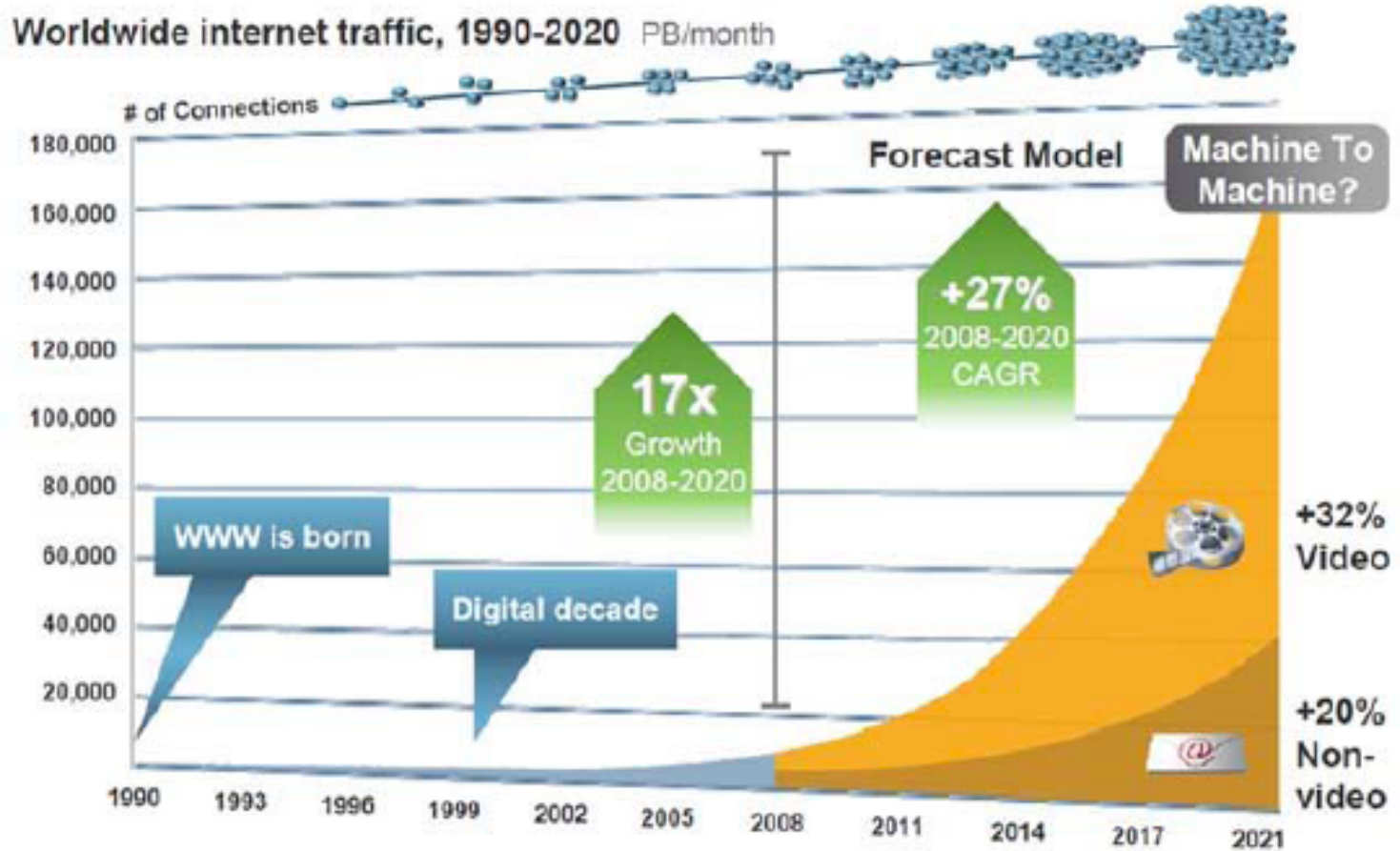


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Chart 69: Internet traffic expected to ramp



Source: Cisco and MINTS

IDC Projections for 2006: **0.18 ZB**, 2010: **1.2 ZB**, 2020: **35 ZB**

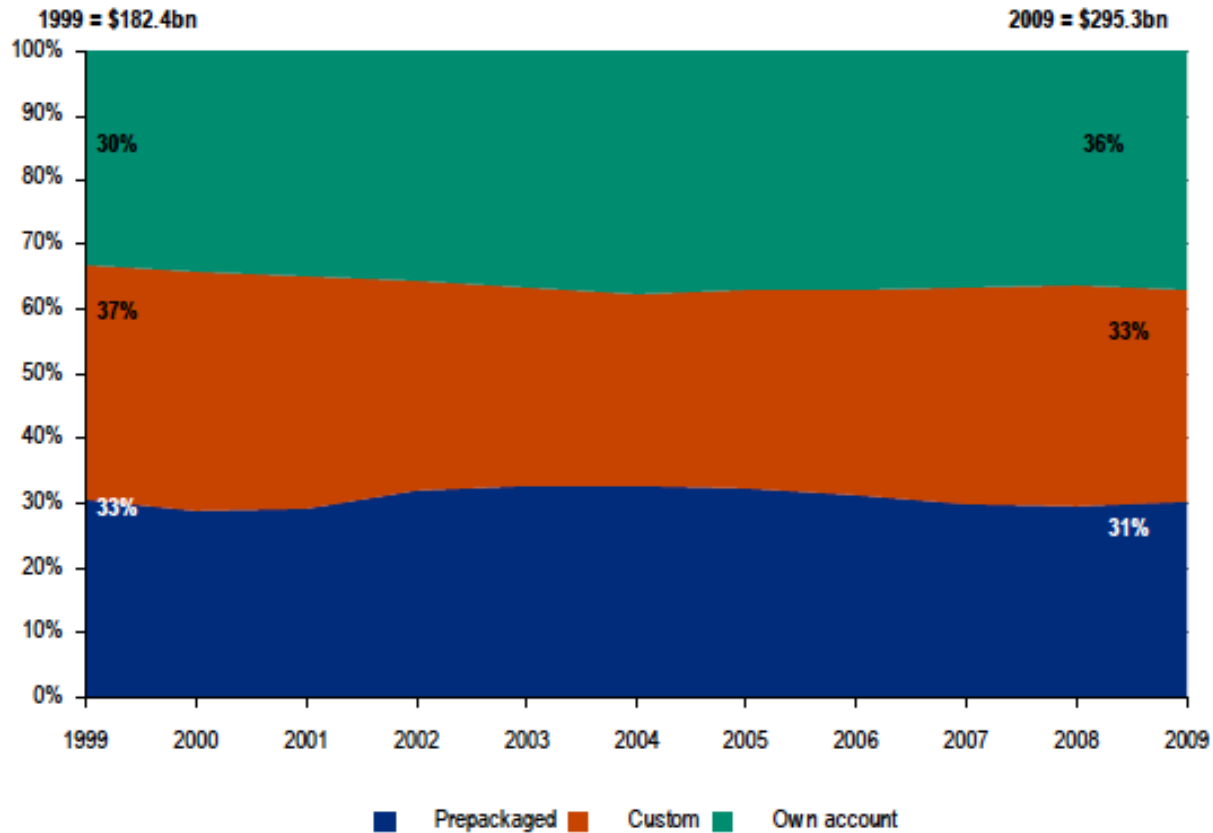
1 ZB = 1,000,000,000,000 GB

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Chart 11: Commercially bought software is only ~30% of US software spending



Source: Bureau of Economic Analysis; BofA Merrill Lynch Global Research
US software spending only



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Websites

555 million – The number of websites as of December 2011.
300 million – Added websites in 2011.

Email

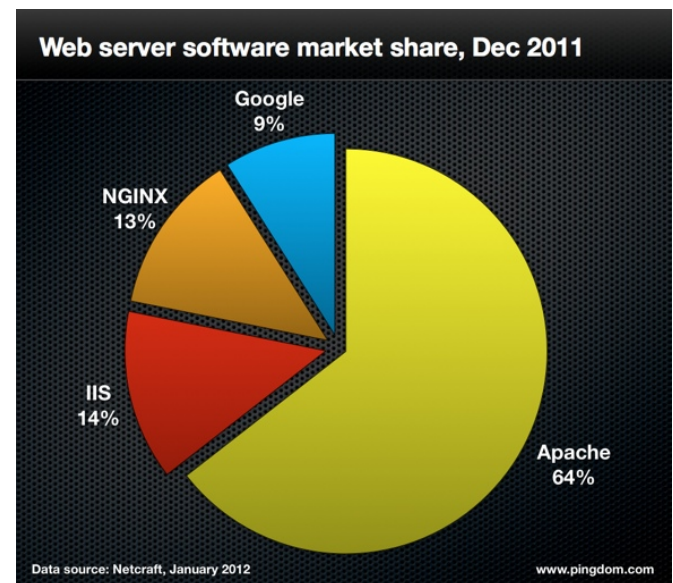
- 3.146 billion – Number of email accounts worldwide.
- 71% – Percentage of worldwide email that was spam (Nov 2011).
- 19% – Percentage of spam emails delivered to corporate email accounts despite spam filters.
- 360 million - Total Hotmail users (largest email service in the world).
- 27.6% - Outlook mail client users (most popular mail client).

“Wal-Mart, the world’s largest retailer, generates a million rows of new transaction records in the database every hour, with a database size exceeding 2.5 petabytes.”

-- BofA Merrill Lynch, May 2011

Web servers

- 239.1% - Growth in Apache websites in 2011.
- 68.7% - Growth in IIS websites in 2011.
- 34.4% - Growth in NGINX websites in 2011.
- 80.9% - Growth in Google websites in 2011.



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Domain names

- 95.5 million – .COM domain names.
- 13.8 million – .NET domain names.
- 9.3 million – .ORG domain names.
- 86.9 million – The number of country code top-level domains (e.g. .CN, .UK, .DE, etc.).
- 220 million – The number of domain names across all top-level domains (October 2011).
- 28% – Marketshare for BIND (leading DNS server).

Social media

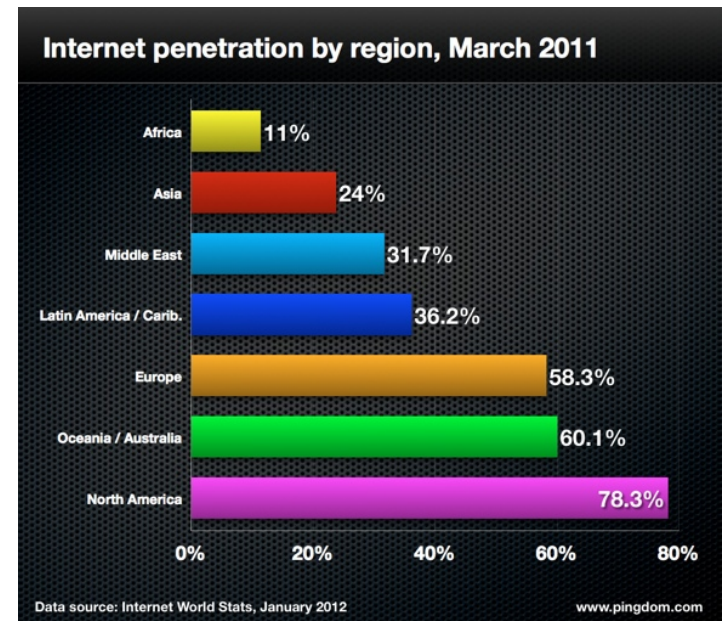
- 800 million – Users on Facebook.
- 200 million – New users on Facebook in 2011.
- 350 million - Facebook users accessing using phones.
- 2.6 billion - Worldwide IM accounts.
- 100 million – Active Twitter users.
- 225 million - Twitter accounts.
- 250 million - Tweets per day (October 2011).

“Chevron accumulates data at the rate of two terabytes a day, and the raw geological data set for an oil field can be 200 terabytes.”

-- BofA Merrill Lynch, May 2011

Internet users

- 2.1 billion – Internet users worldwide.
- 485 million/36.3% – Internet users in China/penetration.
- 922.2 million – Internet users in Asia.
- 476.2 million – Internet users in Europe.
- 271.1 million – Internet users in North America.
- 215.9 million – Internet users in Latin America / Caribbean.
- 118.6 million – Internet users in Africa.
- 68.6 million – Internet users in the Middle East.
- 21.3 million – Internet users in Oceania / Australia.



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Videos

- 1 trillion - Number of video playbacks on YouTube.
- 140 - Number of YouTube playbacks per person on earth.
- 48 – Hours of video uploaded to YouTube every minute.
- 82.5% – Share of Internet users that view videos online (USA).
- 201.4 billion - Number of videos viewed online per month (October 2011).
- 28.3 billion – The number of videos watched per month on Google sites.

“The Large Hadron Collider at CERN can generate data at an astounding rate of 40 terabytes per second.”

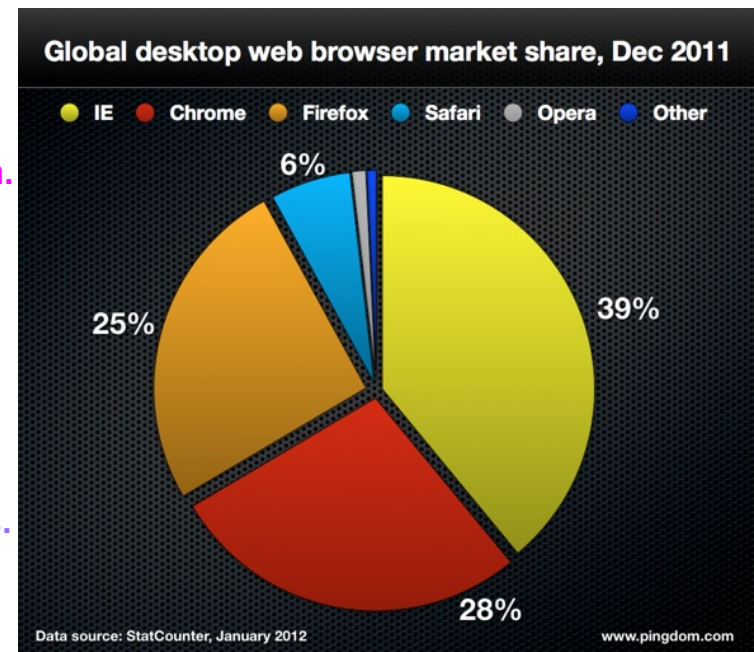
-- BofA Merrill Lynch, May 2011

Images

- 14 billion - Instagrams accounts created.
- 60/second - Average number of photos uploaded to Instagram.
- 100 billion - Photos hosted by Facebook.
- 51 billion – Flickr registered users.
- 4.5 million – Photos uploaded to Flickr per day.
- 6 billion - Photos hosted on Flickr.

Mobile

- 1.2 billion - Active worldwide mobile broadband subscriptions.
- 5.9 billion - Mobile worldwide broadband subscriptions.



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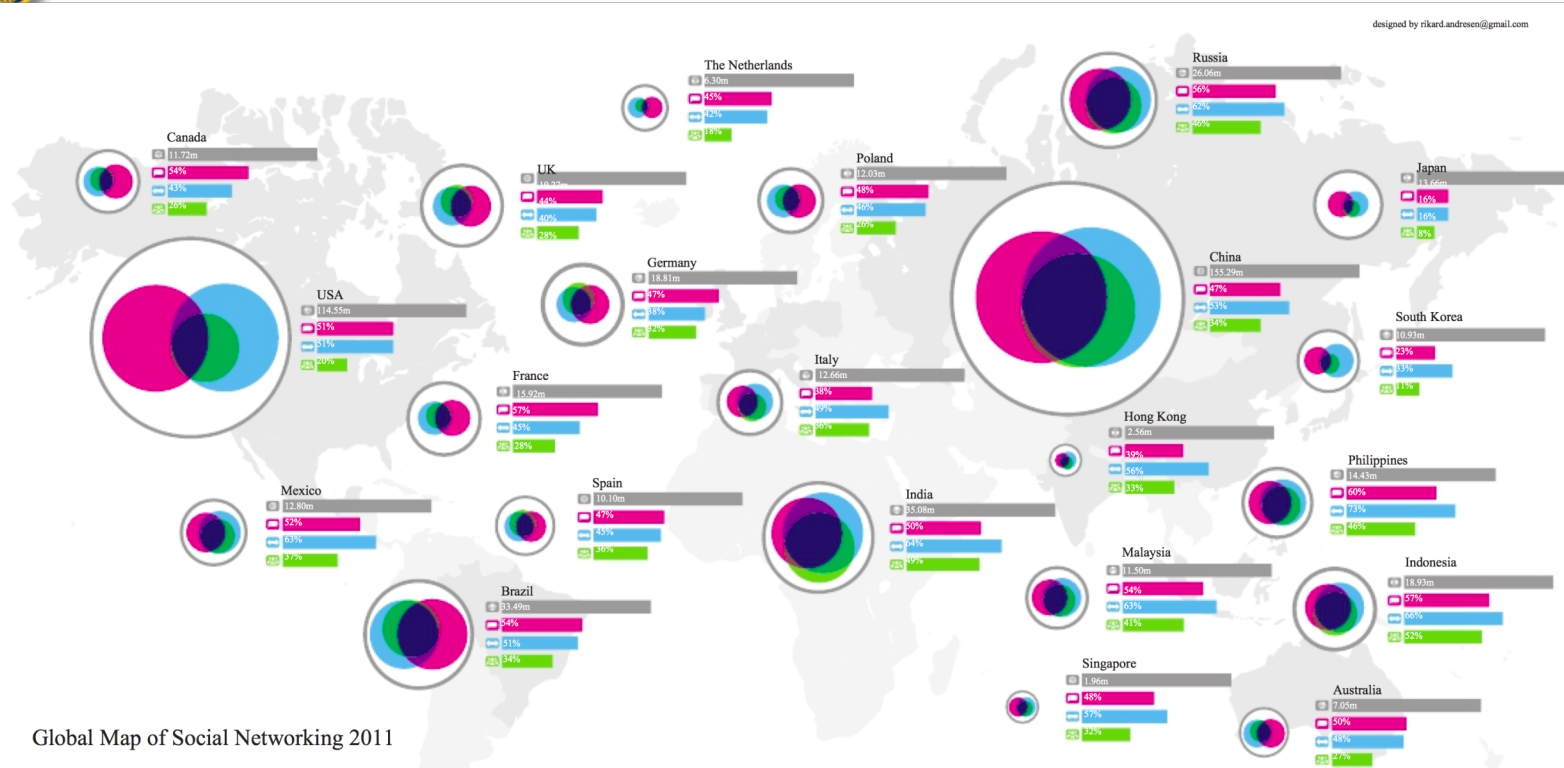


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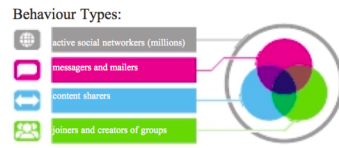
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designed by rikard.andresen@gmail.com

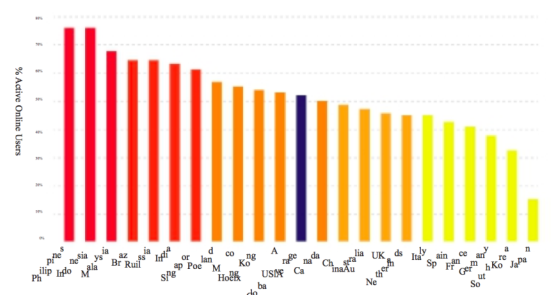


Global Map of Social Networking 2011

About the Map
 This shows the universe size of active social networkers for each market and then segments users into three behaviour types: Messengers, Groups and Content Sharers. This behavioural data is based on a number of detailed questions we conduct into the way that consumers use social networks. Because social networking is now so big and touches every aspect of our internet experience, this detail is essential for the effective planning and implementation of marketing activity across social networks. This data reveals that users across the world are very different in how they utilize their network, with more focus on messaging and less on content sharing in established markets like the US and UK but more focus on content and groups in fast growing markets like Indonesia and China.



Global Social Network Penetration



The most detailed study on the consumer adoption of the internet ever compiled:
 PC // Mobile // Tablets // TV sets // Gaming
 100K+ surveys a year // 3 waves a year // 36 markets
 Find out more // www.globalwebindex.net/
 mail // globalwebindex@trendstream.net

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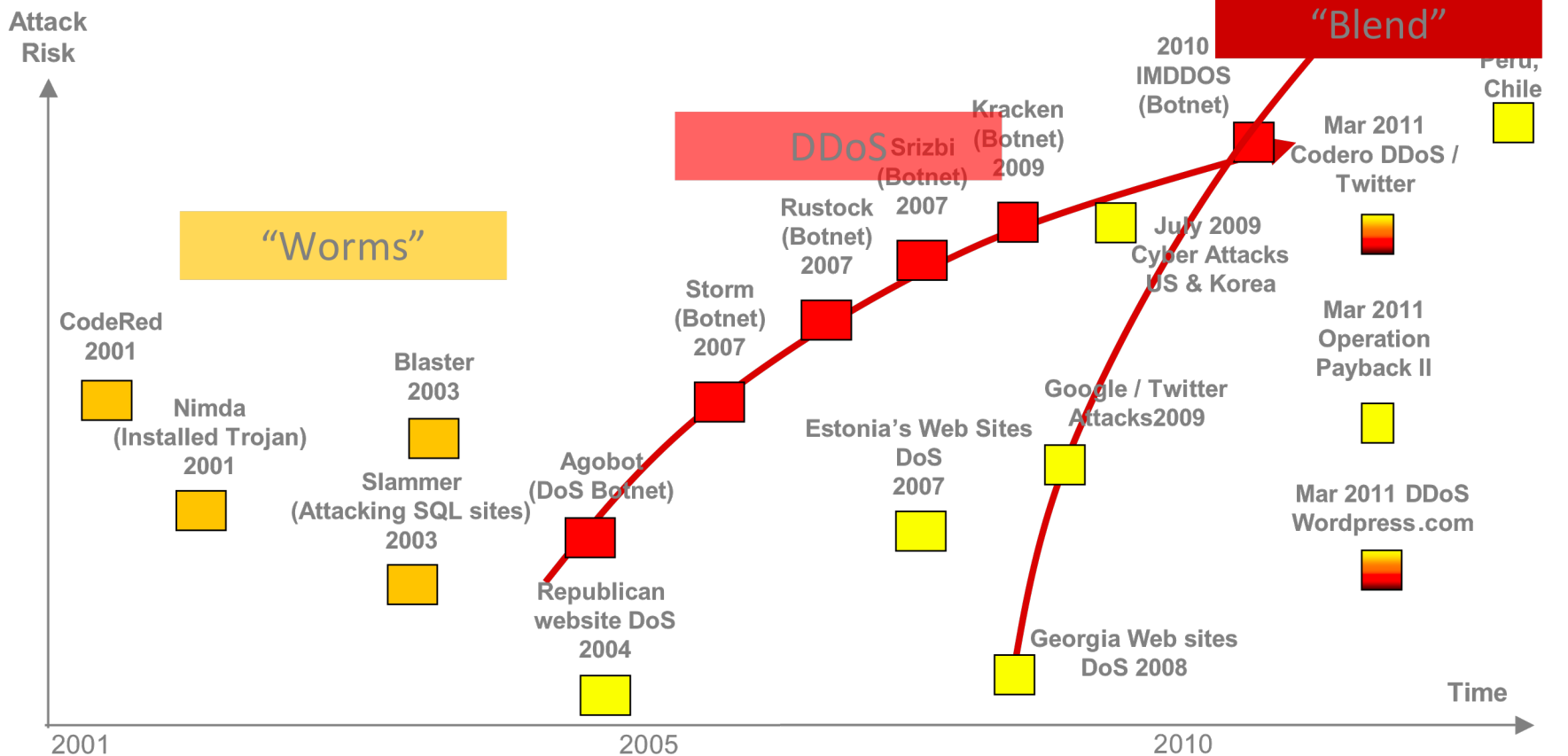


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Vandalism and Publicity
 Financially Motivated
 "Hacktivism"

Blending Motives



from Radware 2011 Global Application & Network Security Report

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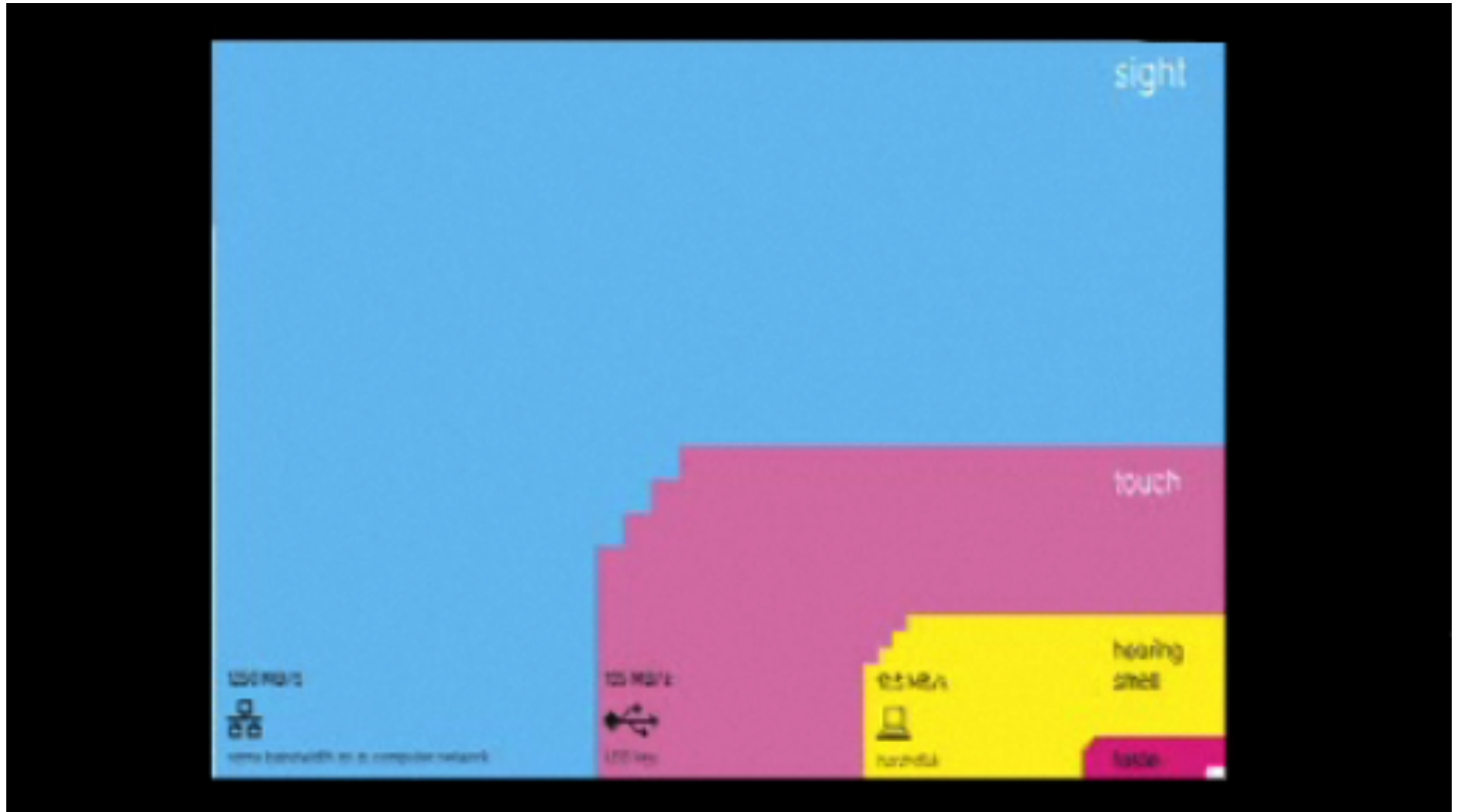
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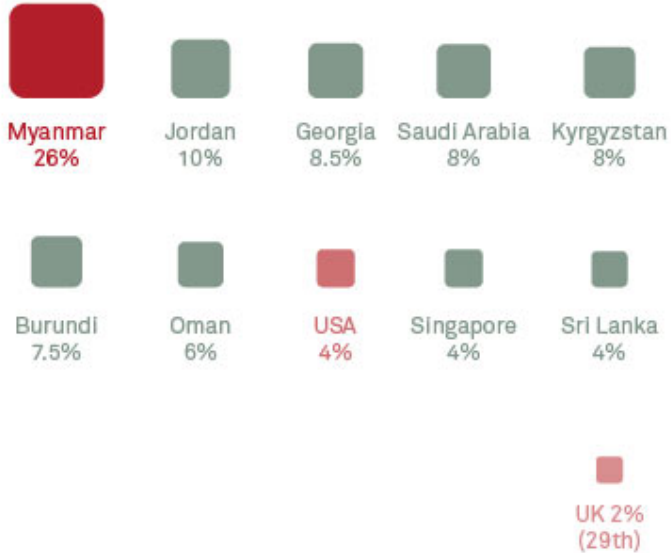
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Big Spenders II

Yearly military budget as % of GDP



Active Forces II

Number of soldiers per 100,000 people



InformationIsBeautiful.net

source: Guardian Datablog, milexdata.sipri.org 2008

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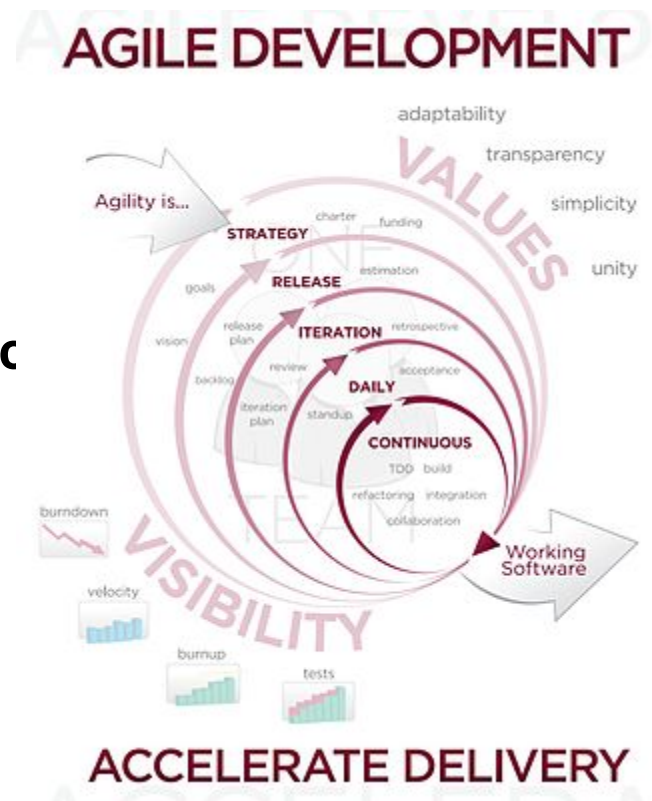
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Acquisition Challenges:

- **Procurement** Agility
 - Leverage Platforms (PaaS, IaaS, AaaS)
 - Incent Industry Teaming (Pay for Play, Co-Teams)
- **Operational** Agility
 - Formally Approve Agile Methods & Tec Insertion (Risk)
 - Relax Nunn-McCurdy (Appropriately)
- **Cultural** Agility
 - Adapt/Adopt (Appropriately)



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The Intelligence Community Must:

- *Demonstrably* **Focus** on Mission Outcomes
- **Solve** Problems *Collaboratively*
- **Innovate** *Relentlessly*

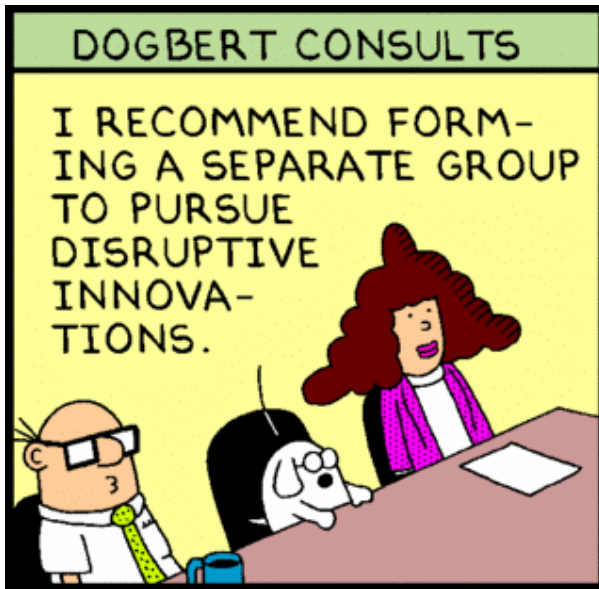
“Of all the awkward people in your house or job, there is only one whom you can improve very much.”
-- C.S. Lewis



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