IDEA CAPSULE 3: GRIDMARKETS

TOPIC: CHANGING THE WORLD ONE FLOP AT A TIME

SPEAKER: HAKIM KARIM,
DIRECTOR & CO-FOUNDER, GRIDMARKETS
In a Nutshell

- GridMarkets has built a patent-pending platform to conveniently and securely share excess Cloud capacity.
- Animators, architects, engineers and others can leverage many globally-positioned servers for computationally intensive problems at the push of a GridMarkets button.
- Over 100 global animators, studios and architects served with over 1500 (rendering) jobs since Nov 2013.
- Market opportunity exceeds $US10bn with use cases in biotech/pharma, engineering, financial services, etc.
- Seeking $US5m to accelerate our plans to drive revenues to $US50m in 4 years.
Founders

>50 years technology & business management experience

Hakim Karim
- 25+ years in IT development, management and innovation
- Accenture, Goldman Sachs and Thomson Financial/Reuters
- 3 prior start-ups
- >US$30m annual revenues
- Endeavor Entrepreneur

Mark Ross
- 25+ years in IT management
- CIO of AIG and Sunlife in Asia
- Winner of 2009 IDC innovation award for Cloud Computing
- Founder of Asia and Middle East Cloud Computing Associations
- >$US200m budget & 800 staff
Great Team and Advisors

Navin – Systems engineering guru

Andy – Networking & dev ops ninja

Babu – Front-end wizard (part-time)

Faiz – Operations & testing gangster

Mike – Chairman. Serial entrepreneur with exits to Microsoft, Reuters et al.

Tad – Ex-CTO of Huawei Symantec & Lagato

Jay – Serial entrepreneur Technology & Telco specialist

Jesper – Biz dev (Japan)

We’re hiring! Please visit www.GridMarkets.com/hiring
Computationally Intensive Problems

DNA Sequencing  Computational Fluid Dynamics  CAD/CAM

Climate Modeling  Anti-money Laundering  Graphics Rendering
Radiation Therapy for Cancer

Where to cut?

Modeling tumors is computationally intensive

Greater accuracy = less destruction of healthy cells
“Shrek’s Law” (on top of Moore’s Law)

- Shrek 1 (2001)
- Shrek 2 (2004)
- Shrek 3 (2007)
- Shrek 4 (3D) (2010)
Shrek 7?

48 frames per second (e.g. Hobbit) @ 4K resolution

>1bn CPU Hours?!
Martin Scorsese’s Hugo (2012)

150,000 CPU hours
US$35,000
in electricity
EACH TIME
## Challenges/Risks

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Many Other Use Cases

**Media**
- Video transcoding
- Web searching

**Engineering**
- Computational fluid dynamics
- Finite particle analysis
- Mesh generation
- Heat transfer analysis
- System dynamic analysis
- Nanotechnology research
- Load & performance testing

**Financial Services**
- Risk management
- Anti-money laundering
- Insurance processing
- Market modelling

**Pharma/Bio-tech**
- Molecular & genome searching/sequencing
- Protein folding
- Biology simulation
- Multi-modal biometrics
- Drug discovery
- Molecular modelling
- Proteomics

**Earth Sciences**
- Climate modelling
- Geological (oil & gas) exploration
- Earthquake detection

**Govt. & Research**
- Prime number search
- Particle physics
- Quantum force modelling
- Astronomical modelling and data analysis
- Cryptography
- Cyber security
Global Market Demand

US$10 – 100 billion*

Doubling every 3-5 years

*Extrapolated from EC-funded research projects using Grid computing
The Paradox of Abundance
>95% Wasted Capacity!

Uptime Institute: 88-94% of data centre power used to run idle servers

Excess capacity can be made available at marginal cost

54% of servers @ 99.4% availability

24% @ 95.2%

22% @ 92.2%
GridMarkets

A private B2B (secondary) market for excess CPU capacity

- Technical platform
- Commercial model
- Legal framework

**Sellers** own and operate machines; only provide excess capacity

- Zero capital cost to GM
- Practically unlimited supply

**Buyers** obtain capacity in core hours of actual usage

- Fraction of normal costs
- No minimum commitment
“The AirBnB of CPU Capacity”
How it Works

GridMarkets Secure Platform

Buyers
- Traditional IT or Managed Hosting
- Jobs
- Data
- Results
- Billing

Sellers
- YOUR compute intensive application
- Excess Capacity
- Payment

Private, Public or Hybrid Cloud
Security

- Buyers need assurance that data and transactions are secure
- Not adversely impact on seller operations or resources

Safeguards

**Technical**
- No direct connection
- Peer-to-peer model
- Virtual machines
- Excess capacity
- Encryption
- Security hardening

**Legal**
- IP protection
- Warranties
- Liabilities
- Indemnity from malicious behaviour

**Biz/Operational**
- Private community
- Transparency
- Counterparty exclusions
Private Community

Transparent

Institutional; not retail
Commercial Model

**Current** – GridMarkets initially acts as a wholesale reseller

**Future** – An exchange with futures, options and other derivative contracts
Legal Framework = “Community Rules”

Seller Assurances
- Buyer’s computations and GridMarkets’ platform will not operationally impact seller’s resources
- Indemnity from malicious behaviour by buyers
- No service level obligations
- Buyer processes certified for processing

Buyer Assurances & Requirements
- IP protection of processing units and data
- Indemnity from malicious behaviour by sellers
- Need to cover all licensing issues
Competitors

✗ Volunteer programs (e.g. SETI@Home)

✗ Public Clouds
  ▪ Primary vs. Secondary market
  ▪ High-performance vs. High-throughput Computing
  ▪ They are our clients!

✔ Frontier Grid – Parabon Computation Inc.
  ▪ Potential competitor but difficult to adopt and not same biz model
Benefits

**Sellers** monetise rapidly depreciating unused assets at marginal cost

**Buyers** save significant money and/or time with no financial outlay or commitment

Free money!

Transform business

- Save budget
- Decrease time to market
- More design iterations
- Larger jobs
- More complex models
- Increase productivity
Case Studies

**Business: Global engineering software**

**Issue:** Engineering work stops as computationally intensive processing occupies workstations.

**Benefit:** Productivity of knowledge workers increased; product modelling enhanced.

**Business: Global hedge fund**

**Issue:** Compromises required on financial models given limited computational capacity.

**Benefit:** Significantly higher granularity of model iterations improved investment insights.

**Business: Global video rendering**

**Issue:** Capital rich competitors with ample computational resources grabbing market share.

**Benefit:** Expanded service offering resulting in new customers and revenues.
Accomplishments

August
- US patent filing

August
- US$100k seed investment
- US$50k deferred legal fees

August
- Soft launch
- US$50k angel

March
- US$50k angel
- EU patent filing

May
- US$100k angel

2011
- September
  - Proof of Value Pilot

2012
- August
  - First buyer & 2x seller contracts

2013
- November
  - LIVE

2014
- February
  - +1 buyer
  - Accepted into Endeavor.org

  Q2
  - +2 buyers
  - +1 seller

  Q3
  - +2 sellers
Value and Exits

Value created:
1. Community – market liquidity
2. Platform – outsource/sell/open-source?

Potential exits:
- IPO
- Primary-market provider
- Infrastructure software vendor
- Service provider
- Exchange
Summary

✓ Huge and unbounded opportunity
✓ Disruptive and transformative
✓ Kick-ass team!
THANK YOU