

## The Entrepreneur and the Cloud – Silicon Valley Rejuvenated, Singapore Coming of Age.



transforming the accelerating pace of change  
from a challenge to an opportunity

## Overview –Topics

- Our current context and the big shift
- What it means for SV?
- Cloud Computing as an engine of innovation
- Reflections on Singapore's Innovation Ecology



Really? How do these topics relate?

## Our Context

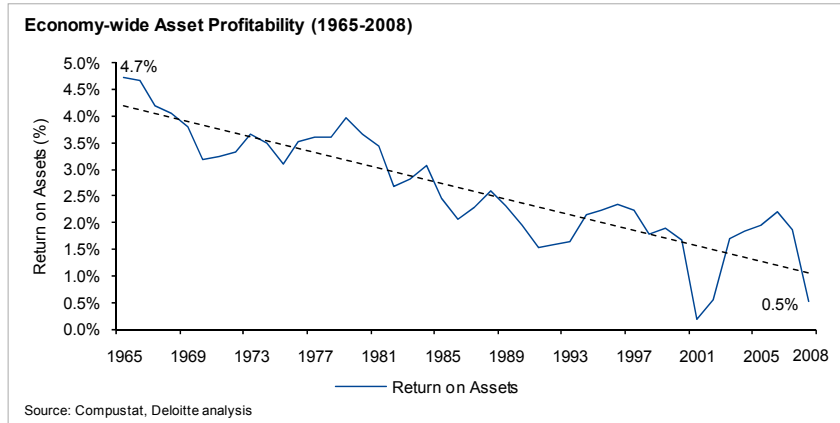
Is it any surprise many of our current models, forecasts, and assumptions anticipate a “return to normal” after the Great Recession ends?

Such cyclical thinking ignores the powerful forces of longer-term, secular change—forces that are increasingly undercutting widely held assumptions about the sources of economic value.

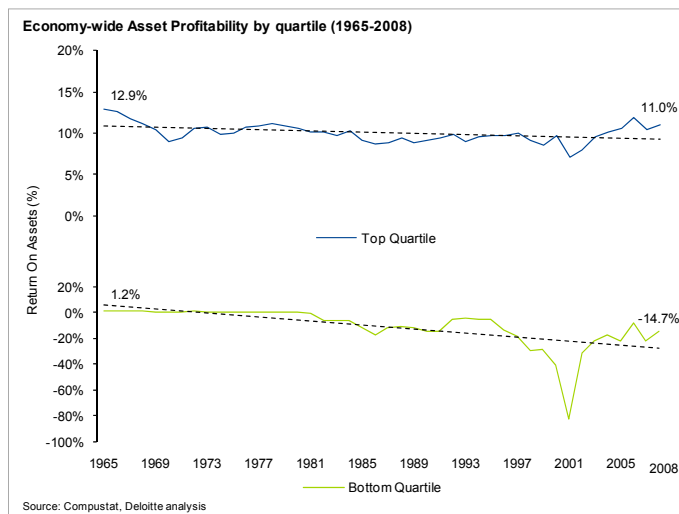
“Normal” may in fact be a thing of the past.

Trends set in motion decades ago are fundamentally altering the global landscape as a new digital infrastructure, built on the sustained exponential pace of performance improvements in computing, storage, and bandwidth, progressively transforms our business environment. This infrastructure consists of institutions, practices and protocols that together organize and deliver the increasing power of digital technology to business and society.

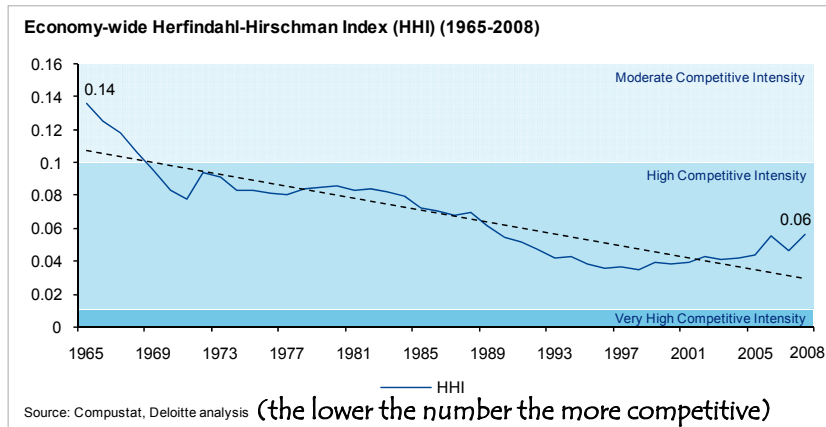
The return on assets (ROA) for U.S. firms has steadily fallen to almost one-quarter of 1965 levels



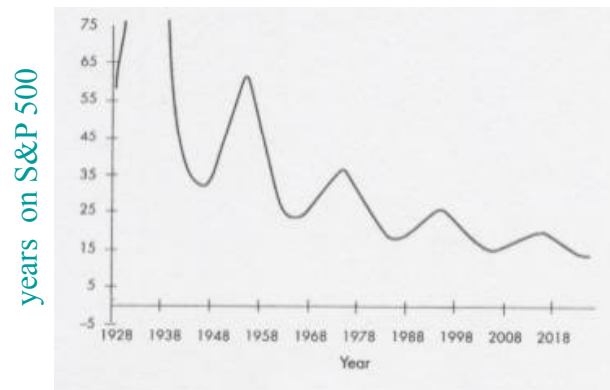
Similarly, the ROA performance gap between corporate winners and losers has increased over time, with the "winners" barely maintaining previous performance levels while the losers experience rapid performance deterioration



## U.S. competitive intensity has more than doubled during that same time

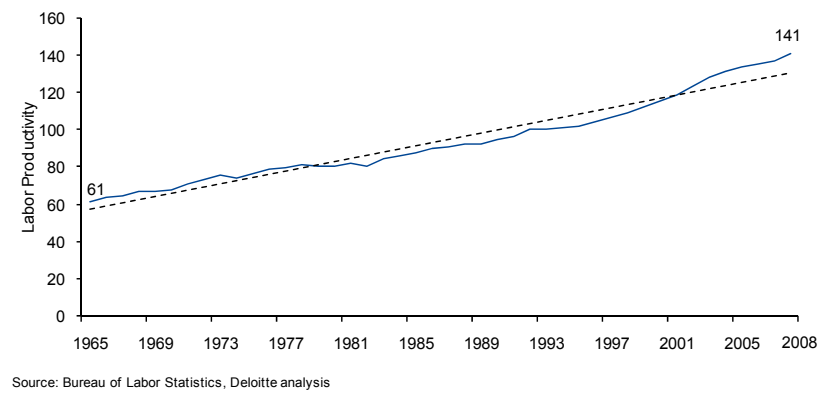


## Average Lifetime of S&P 500 Companies



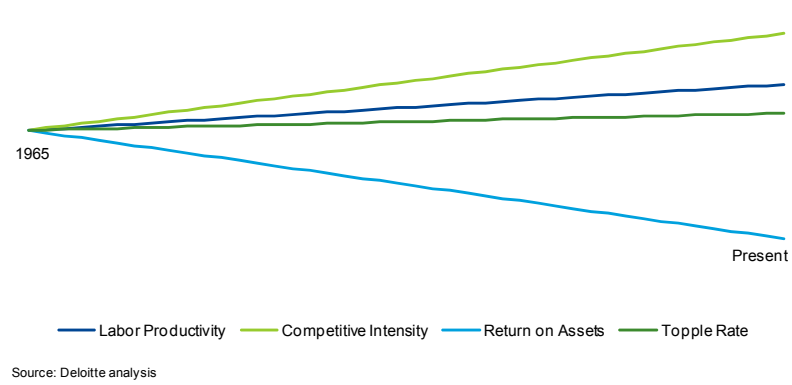
However, in those same 40 years, labor productivity has doubled – largely due to advances in technology and business innovation, coupled with open public policy and fierce competition.

Economy-wide labor productivity (1965-2008)



The performance paradox:  
ROA has dropped  
in the face of increasing labor productivity

Firm performance metric trajectories (1965-2008)



But why is this happening??



## 20<sup>th</sup> Century Era Captured by Alfred Chandler Push Economy



20<sup>th</sup> century infrastructure  
roads/cars/trucks/trains/ships/airplanes

Standard S curve: stable over decades.  
(Few real changes in 60<sup>+</sup> years)

*Scalable Efficiency* becomes the goal.



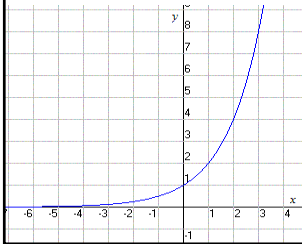
S-curve

- predictable
- hierarchy
- control
- organizational routines
- minimize variance

## Organization Architectures leverage the properties of Infrastructure Architectures

stable transportation infrastructures =>  
Chandlerian firms & focus on *scalable efficiency*

21<sup>st</sup> C infrastructure drive the exponential  
advances of computation/storage/bandwidth -  
causing major jumps/disruptions  
in infrastructural capabilities.



➔ What does this say about  
institutional architectures that  
can leverage this acceleration?

## The Big Shift

Stable Environments	➔	Dynamic Environments
Knowledge <u>Stocks</u>	➔	Knowledge <u>Flows</u>
Knowledge Transfer	➔	Knowledge Creation
Explicit Knowledge	➔	Tacit Knowledge
Transactions	➔	Relationships
Zero Sum	➔	Positive Sum Mindsets
Push Programs	➔	Pull Platforms
Institutions driven by <u>scalable efficiency</u>	➔	Institutions driven by <u>scalable peer learning</u>

Key is how one participates in knowledge flows  
especially on edges (firm/industry/region/gen Y,..)

in a rapidly changing world  
innovation and agility  
must reign supreme



Ah, but then think  
ecosystems & platforms!

Cloud Computing  
as an innovation platform  
And  
helping us participate in many  
Kinds of flows

## Amazon's Novel Innovation Model

2 pizza team rule and the platform



Amazon's Cloud and web services (AWS) creates an ecosystem that enables startups to get going fast, CHEAP and scale quickly.

Cost:  
cpu: HP tower 10 cents/hr  
storage: 15cents/gigabyte/month

And monitor your virtual stack by iPhone

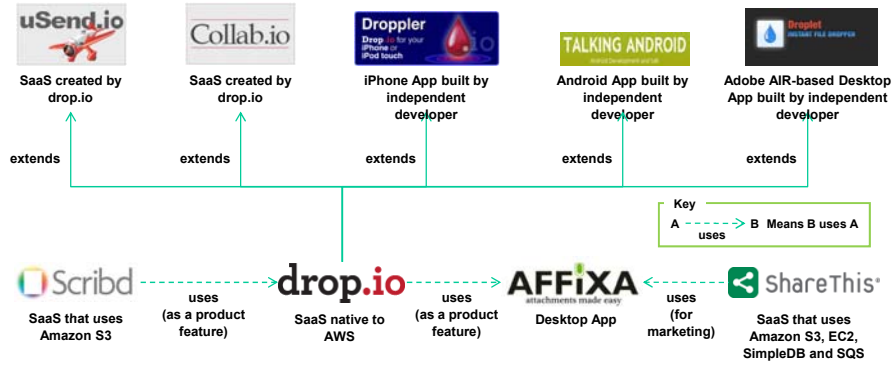
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Animoto startup – (personal MTVs) went viral one day on Facebook: scaled from 50 servers to 5000 servers in just about a day on the Amazon Cloud

## Examples of SaaS services built on AWS, Google AppEngine and Force.com

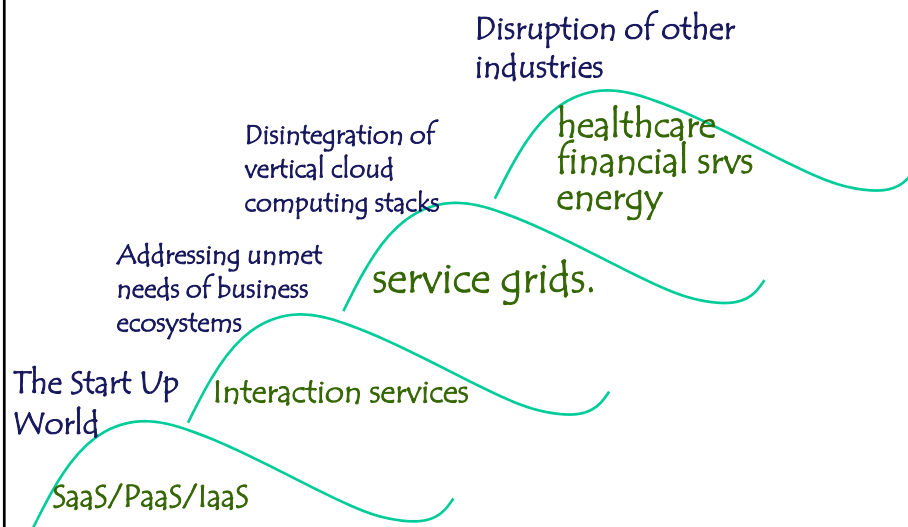
Application Management	Business Infrastructure Services	Business Operations Services	Customer Applications
<b>App Development</b> 3scale caucho <b>App Testing</b> CloudTest by SOASTA SauceLabs <b>App Security</b> Symplified <b>App Performance Monitoring</b> New Relic Techout	<b>Storage</b> ALTEGA egnyte JUNGLE DISK sonian CORP zmanda Open Source Backup elephantdrive AXCIENT HANZO ARCHIVES ctera <b>Telephony</b> *# StarPound twilio	<b>Order /Payment Mgmt</b> Auctify Egencia FUJITSU <b>Salesforce.com Extensions</b> plan2win  <b>Other Business Apps</b> napera CODA ABACA unfuddle digitalCHALK dreamfactory smartsheet xignite <b>Business Process Mgmt</b> RUN MY PROCESS Gigamon HOSTED FTP.COM	<b>Content Hosting/Delivery</b> digitaria melodeo WOWZA SmugMug Linden Lab JAMGLUE playfish GIGAVOX mediasilo LiveLeader <b>eCommerce</b> Zoomli Books GIFAG <b>Other Commerce Apps</b> Walk Score Ez asset.com <b>Social Applications</b> PostRank LifeAware AdaptiveBlue pixiverse ShareThis  <b>Other: eMail, Portals, Publisher Content, Blogs, etc</b>

## Example of a service on AWS, drop.io, around which a cloud-based ecosystem has evolved



But now think about Li & Fung's ecosystem with 12,000 'small' partners needing co-ordination among them.

## Cloud computing will create four waves of disruption



In each wave –  
silicon valley/west coast reigns supreme

But also SV reflects the power/agility of  
ecosystems that comprise many small  
talent driven, agile firms where  
the whole is more than the sum of the parts .

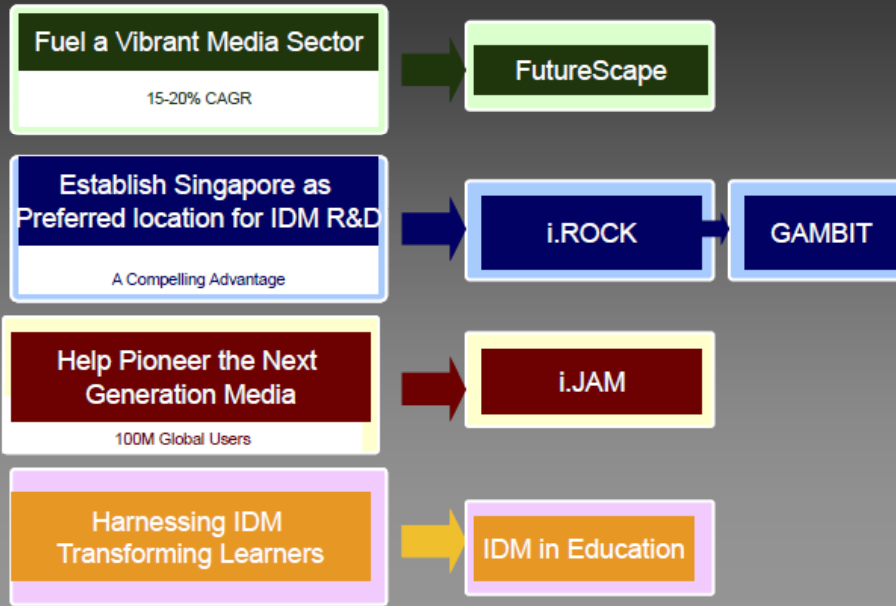
Such ecosystem supported by learning with &  
from each other (peer based learning) &  
enriched by cloud computing & social media  
should rule the day.

## Singapore's Interactive Digital Media Program

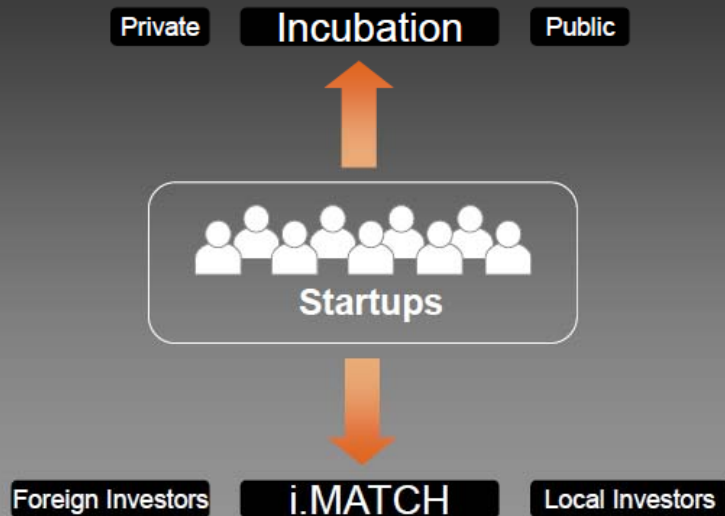
One of their three chosen domains for building  
their 21<sup>st</sup> century economy.

- Biotech
- Cleantech
- IDM

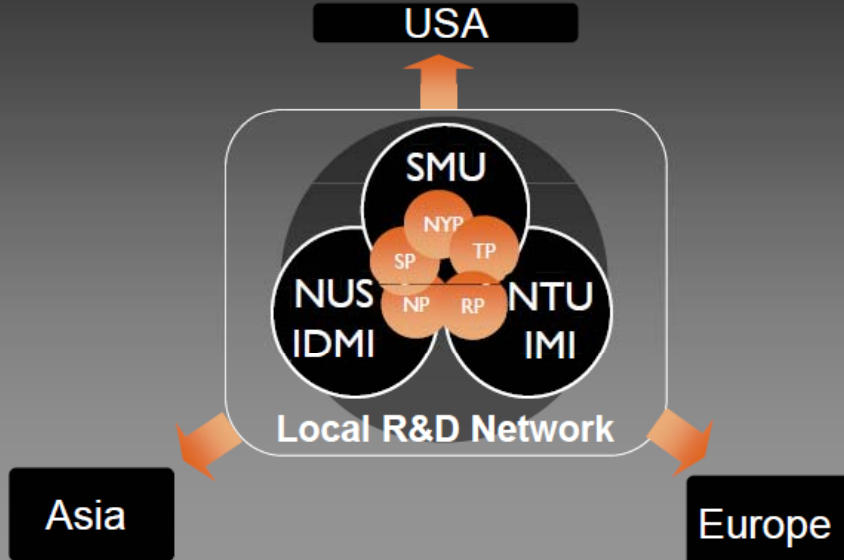
## Goals & Initiatives of IDMPO



## i.JAM: Grassroots Innovation

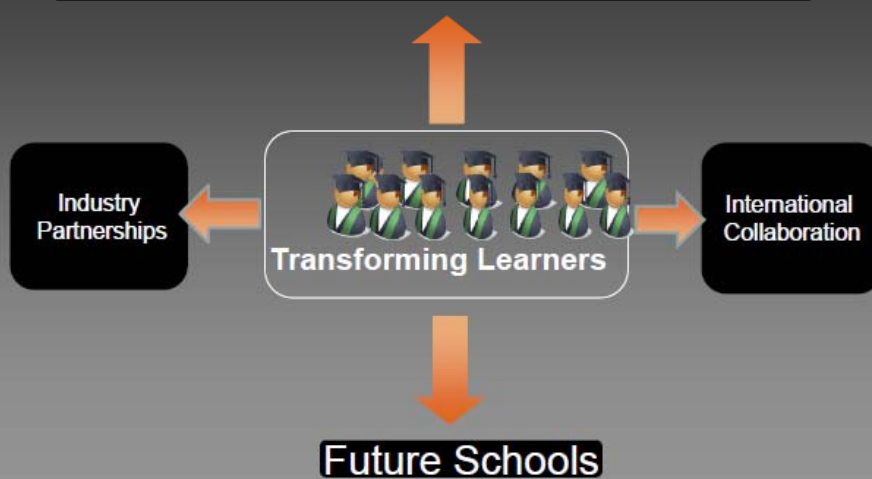


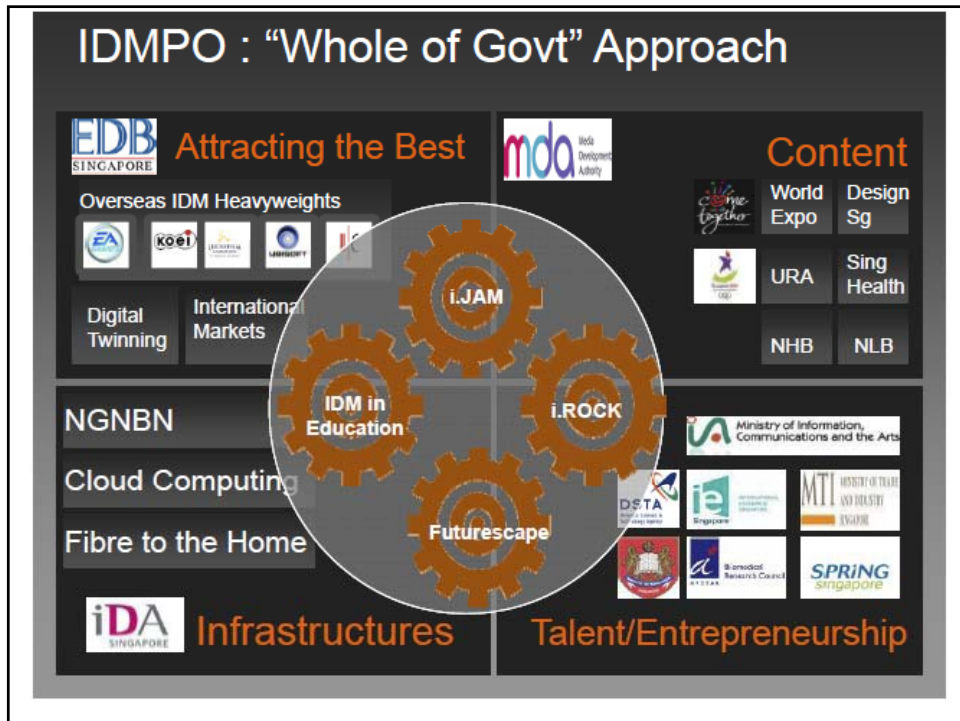
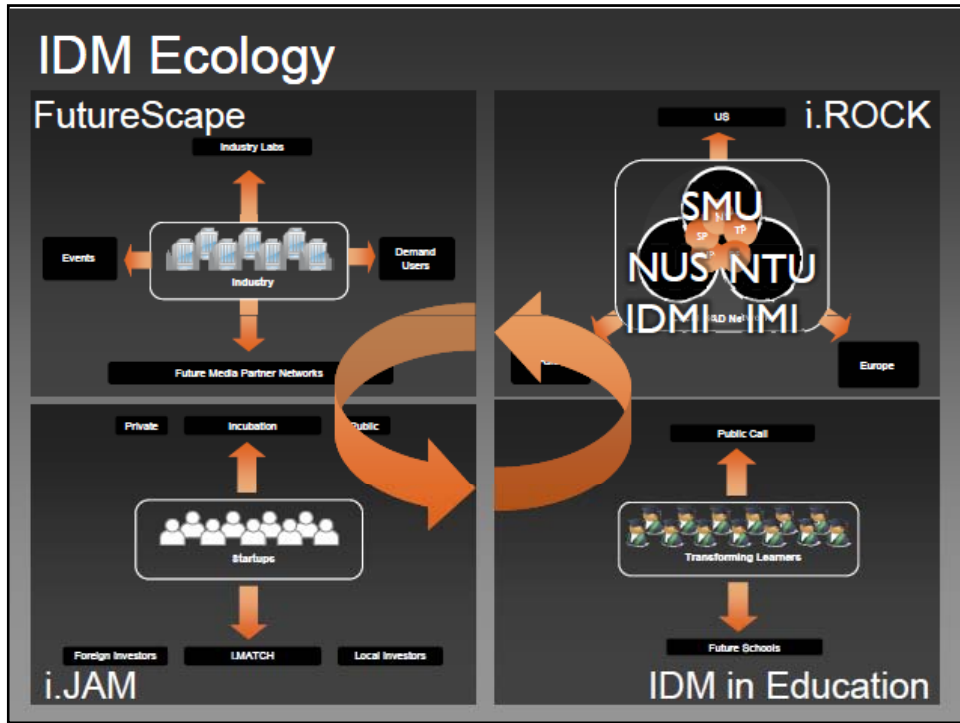
## i.ROCK: X-discipline research and international research centres



## IDM in Education

Pedgagogical Research & Experiments





Thank You

And special thanks to  
Deloitte's Center for Edge  
Shift Index Team – Deloitte COE  
Cloud Team – Deloitte COE  
Michael Yap and IDM – Singapore

