

Engineering a Market: Concepts & Research on the HAT

Irene C L Ng

Professor of Marketing & Service Systems, WMG
Director, International Institute of Product & Service Innovation

irene.ng@warwick.ac.uk

@ireneclng

<http://uk.linkedin.com/in/ireneclng>

bit.ly/vcssblog

www.warwick.ac.uk/go/sswmng

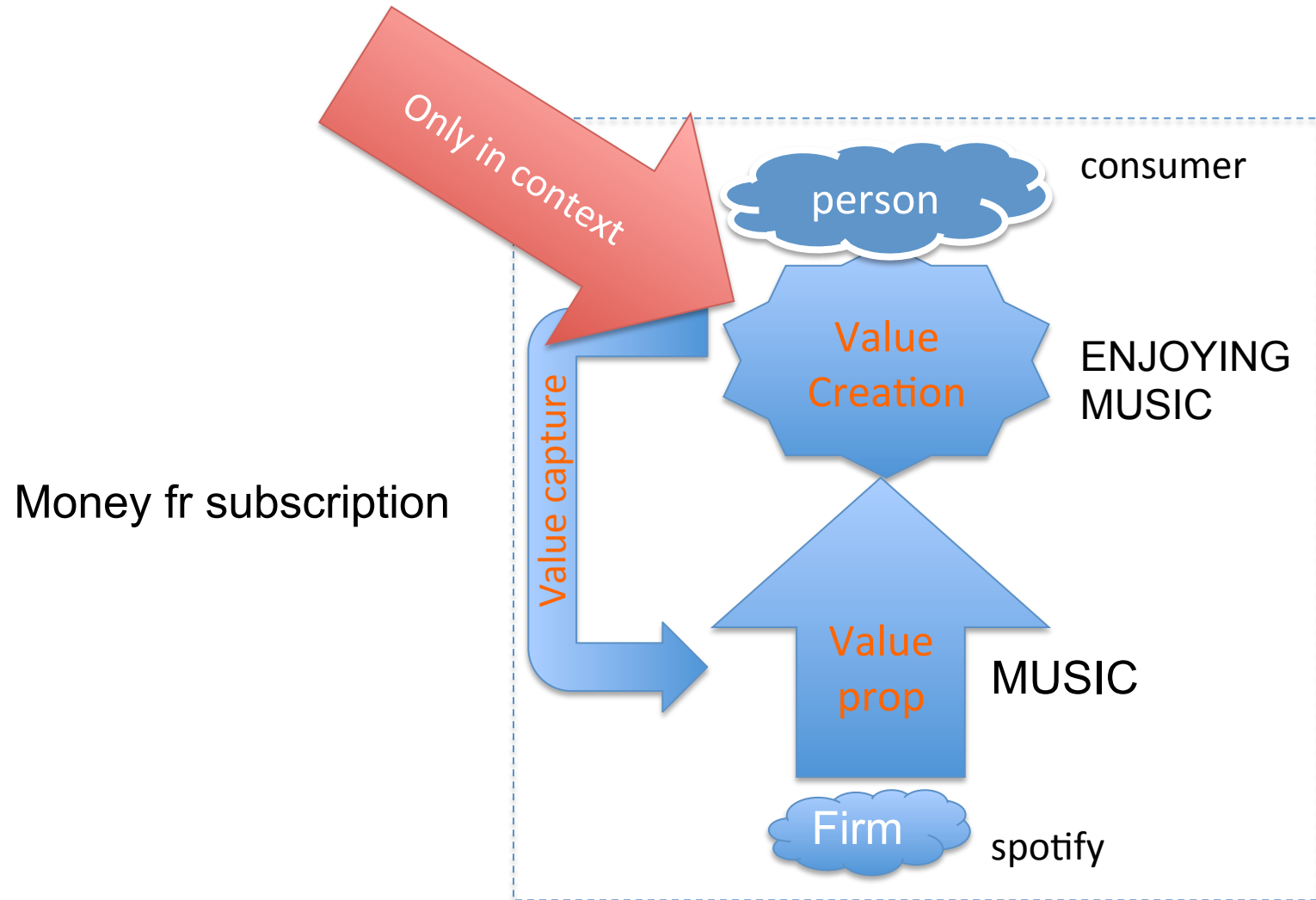
www.ireneng.com



Some background and terms on Business and Economic Models

From a service-dominant logic
perspective (Vargo & Lusch,
2004; 2008)

Business Model: Music



Economic Model

- An economic model is the model of an ecosystem (like a market) that distributes rents (ie revenues) either through the pricing mechanism or regulation, according to what the entity (such as a firm) does to stay within the ecosystem. NEW economic models, often arising from new business models and/or new entrants, redistributes rents within the ecosystem occasionally resulting in the exit of existing entities (disruption)
- Who does what, who gets what



THE UNIVERSITY OF
WARWICK



UNIVERSITY OF
CAMBRIDGE

UNIVERSITY OF
EXETER

Multi-sided Market Platform for New Economic and Business Models



The University of
Nottingham



University of the
West of England

Irene Ng, Roger Maull, Jon Crowcroft, Tom Rodden,
Glenn Parry, Kimberley Scharf, Chris Speed

The H.A.T

- Platform for Multi-sided Market powered by Internet-of-Things: Opportunities for New Economic & Business Models
- Research Councils UK £1.2m (USD1.8m) project
- 7 academics, 9 researchers (16 total) across 6 universities in the UK from economics, social science, design, computing and business
- Exeter, Bristol, Nottingham, Warwick, Cambridge, Edinburgh
- Started 1 June 2013
- The outcome- a MARKET platform at the home for personal data
- More information at www.hubofallthings.com

The externalities of an internet connected digital economy

- Externality: a consequence of an industrial or commercial activity which affects other parties without this being reflected in market prices, such as the pollination of surrounding crops by bees kept for honey (+), pollution caused by cars (-)
- Externalities of a digital economy
 - (+): more digital visibility, better coordination
 - (-): fear, risks, privacy concerns
 - (+/-): generation of more personal data

Internalising the personal data externality for growth in the economy

- Personal data from:
 - Control and actuation of IoT/Internet connected objects (meta data)
 - Online services (personal information)
 - Transactions e.g. banking, health (personal information)
- Internalising (into the economy) the externality of a lot of personal data generated could result in jobs/innovation/new businesses
- But to do that, we need to engineer a market for personal data

What do you need for a market

- Value proposition (an offering, a good or service)
 - Something that satisfies a need
- Value creation (the experience, consumption or interaction with the good or service)
- Demand (customers)
- Supply (usually firms)
- A place to trade (e.g. a physical place, a tech platform) for value capture (revenues/payments) to occur
 - With Accepted Regulation
 - With Accepted Price mechanisms

The Market for personal data

- No value proposition (no product)
- No value creation (no experiences)
- No demand
- No supply
- No place to trade

....but hey, we have £1.2m?
(it is **research** for a reason.....)

Let's start with the value proposition of personal data

We need to create an offering
(product) out of personal data

Creating the value proposition (‘offering’) of personal data

- Creating an offering require:
- Raw materials (existing personal data out there)
- A ‘factory’ consisting of
 - Labour (to transform the raw materials)
 - Technology (to transform the raw materials)
 - Capital

Creating the value proposition (‘offering’) of personal data

- ‘Raw’ Personal data is currently ‘messy’
- Collected by firms for their own purposes
- Deeply siloed within verticals, including their format and representation of data
- Two challenges (analogy with diamonds):
 - The ‘raw’ personal data supply. consumers do not have it, do not have access to it (the mining issue)
 - The transformation of the raw PD into something that is a **value proposition** (the cutting issue)

Task 1: Multi-sided market 1 To Gather Raw Personal Data

- What is a Multi-sided market
 - economic platform having two distinct user groups that provide each other with network benefits
- E.g. Singles bar, ebay, fishmarket
- For Personal data – usergroup 1 could want it IF IT BELONGED TO THEM – consumers; usergroup 2 could give it IF IT BENEFITED THEM- firms

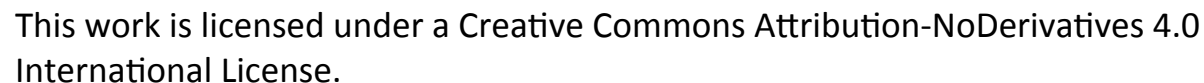
Task 1: Multi-sided market 1 – Gathering Raw Personal Data

- Demand: Consumers
 - Why would they want it (they need to spend money (capital) to acquire it)
- Supply: Internet services, IoT devices, any firm that holds ‘raw’ consumer data
 - Why would they give it

Hold that thought.....(because it has to be solved simultaneously with other tasks in MSP 2a and 2b to engineer a self regulating market)

Task 2: Transforming the 'Raw' Personal Data - the 'factory' of human labour and technology

- Creating the value proposition out of 'raw' personal data:
 - Separating contextual from acontextual metadata
 - Value is created 'in-use' and 'in-context' of objects
 - Metadata of 'in-use' and 'in-context' must be separated from 'static' metadata on objects
 - E.g.
 - T-shirt 'in-context' (contextual) have the following parameters (1) start/end time of use (duration) (2) location of use etc.
 - T-shirt (accontextual) have the following parameters (1) colour (2) size (3) supplier identifier ID
 - *Contextual metadata is therefore data on value creation, acontextual metadata is data on value proposition*
 - Creating relationships between contextual metadata
 - Human value creation with objects are part of a value constellation with membership of objects i.e. toothpaste, toothbrush, water, light, mirror
 - Members of value constellation comes about through activity sets, i.e. events e.g. driving to work, having breakfast.
 - Human lives are about the mundane but events are what create meaning in human lives
 - *Creating relationships between contextual metadata (value creation) creates relationships between value propositions (vertical industries)*

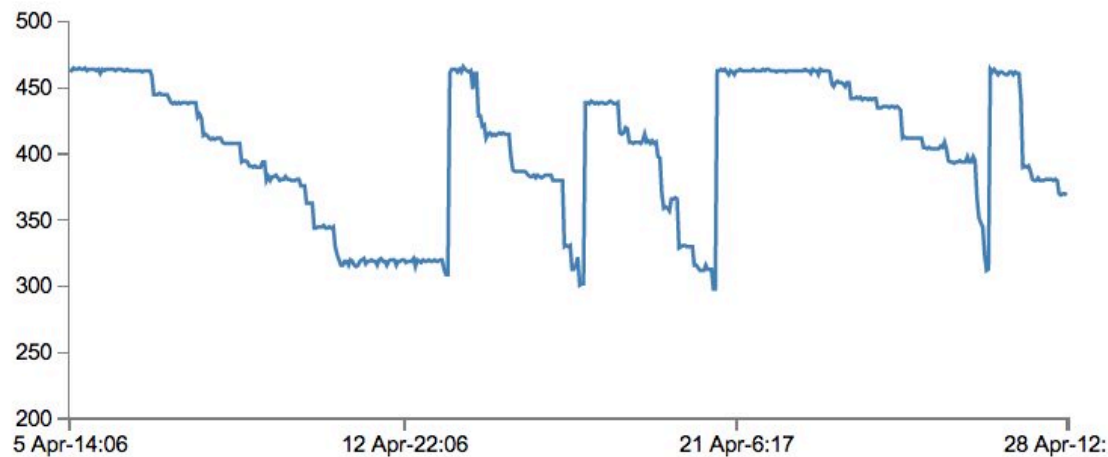
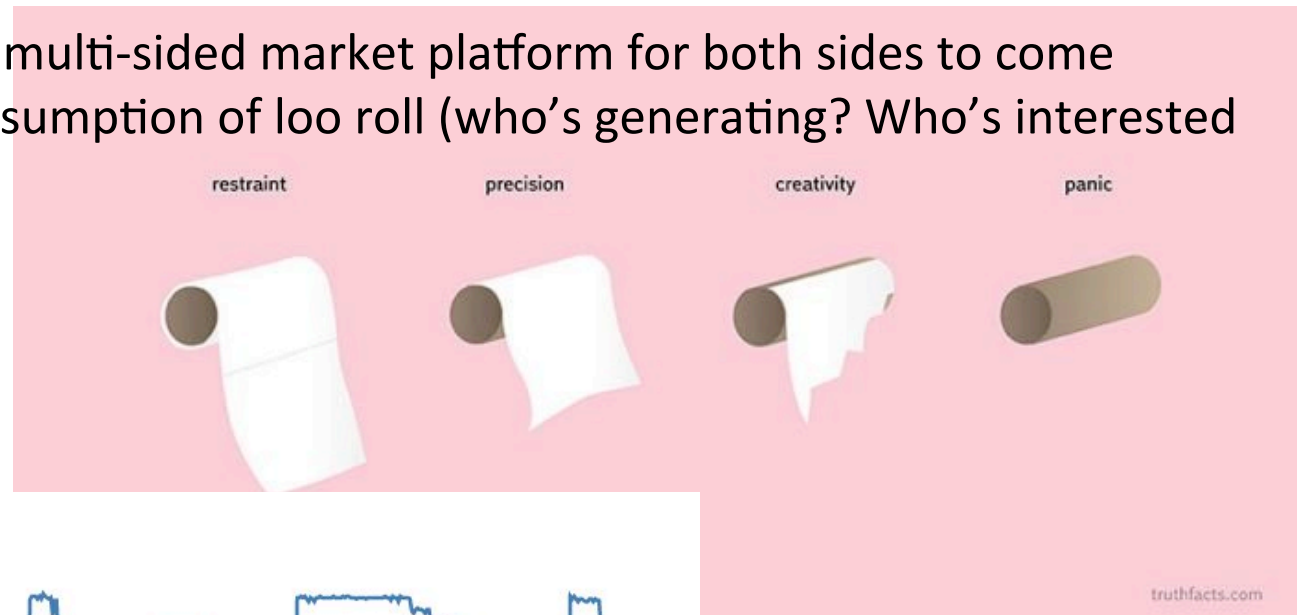


Transformed Personal data

- Now becomes the a value proposition to both firms (to create applications) and consumers (to use for more effective lives) e.g.
 - Contextualised Data on consumption of FMCG
 - Contextualised Data on experience of objects
 - Contextualised Data on interactions with devices
 - Data on contexts
 - Data linking contextual with acontextual
- Who might want this?
 - USD1billion spend on CRM
 - Supply chain that ends at high street, supermarkets or pharmacies/hospitals
 - No visibility of consumption

Transformed Personal data

- Need to create a multi-sided market platform for both sides to come together e.g. consumption of loo roll (who's generating? Who's interested in the data?)



The Market-making function of the HAT

The facilitate value creation with
personal data, value capture of
goods/services around personal data

Task 3: Multi-sided market 2 – Using Transformed Personal Data for a two-sided market – data usage

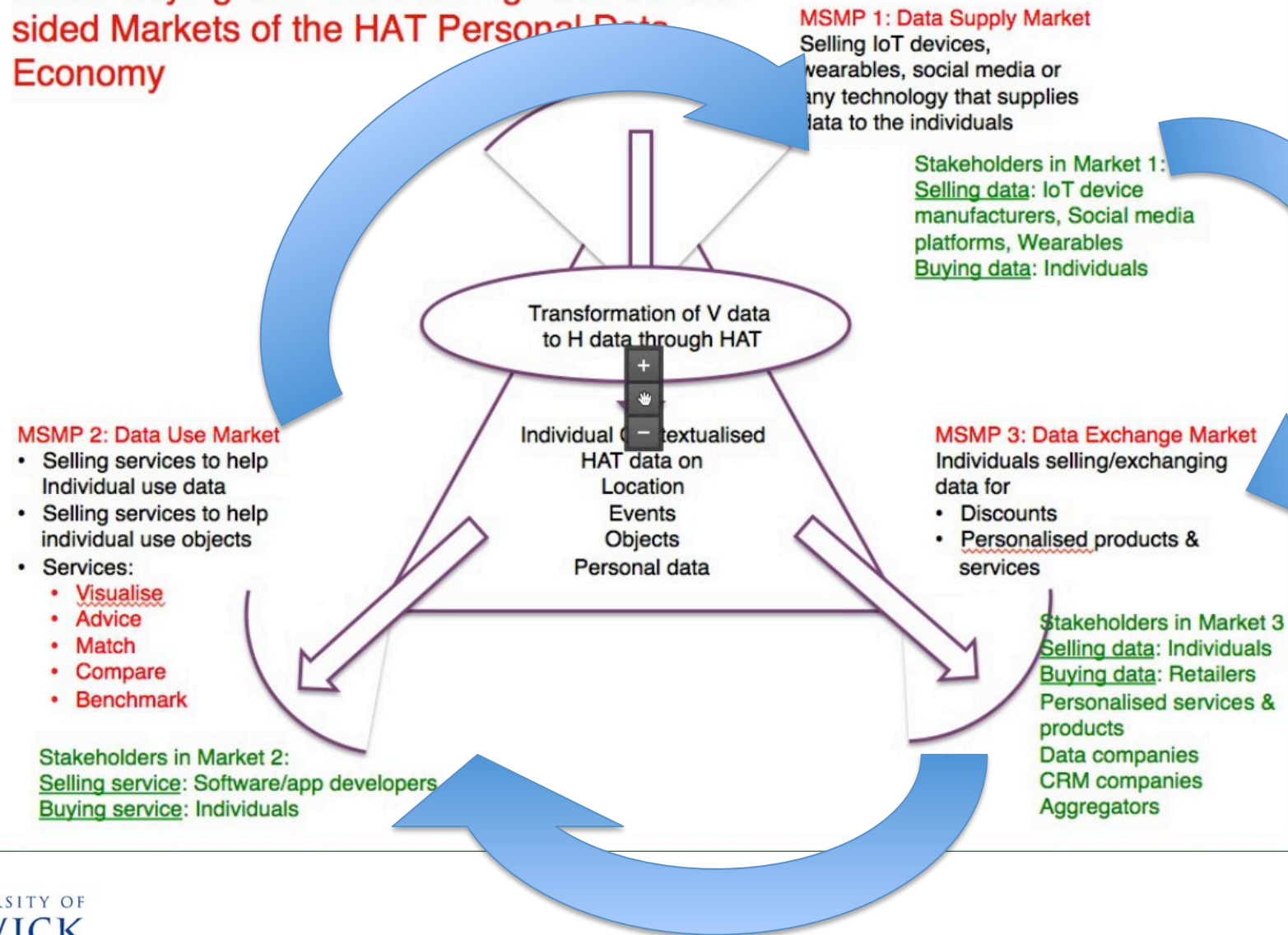
- One side: For firms to create offerings to analyse, visualise and help consumers use personal data
- The other side: Consumers to make their lives better
- Two-sided challenge
 - Consumers
 - Why would they want it – to make their lives better
 - Firms
 - Why would they give it – full scalability of their offering, the market of one and the market of many, scalable revenues

Task 4: Multi-sided market 3 – Using Transformed Personal Data for a two-sided market – data exchange

- One side: For firms to take on Transformed Personal data to personalise their existing products
- The other side: Consumers to get efficiency from purchase
- Two-sided challenge
 - Consumers
 - Why would they want it – to save money, to get discounts, for personalisable products
 - Firms
 - Why would they give it – full scalability of their offering, the market of one and the market of many, scalable revenues
 - CRM that includes consumption!!!

Engineering a self-regulated market to kick start the personal data economy

Who's buying and who's selling: The 3 Multi-sided Markets of the HAT Personal Data Economy



HAT as Platform to kick start Personal data economy

- Stimulate new horizontal business models
- Connecting internet companies with manufacturing companies
- Redistribution of rents
- Disruptive
- Creates market efficiency (higher willingness to pay)

Multi-sided Market Platform of the HAT

- The challenge before us:
 - Price setting & subsidies are insufficient get ecosystem performance - balance of value creation vs higher platform profits - regulatory power is required and any revenues must be incentivised to reward high platform performance & better ecosystem – ie not public regulation, not private motive
 - Platform regulator must hv access to wider menu of regulatory instruments to implement desired actions
 - ‘hard’ instruments: Licensing, property rights assignment, legal instruments (‘laws’, ‘design rules’, ‘versioning’) i.e. Technical design, system architecture & technical relationships must be specified to ensure ecosystem performance and to be the trust broker & platform leader, to aid HAT providers and firms
 - ‘soft’ instruments also used e.g. communication, signaling, ratings
 - Incentive instruments also used to perform regulatory role

HAT Regulatory instruments – what have we learnt from MSP regulation

- That price mechanism on platform is limited for eco-system performance
- Regulation through strategic instruments is required:
 - Initial growth through restricted access? Who will be the first HAT providers?
 - Facilitating and regulating member interactions? E.g. only inventory, replenishment, analysis & advice functionality?
 - Design marketplace for widget innovation
 - Regulation to enhance competition for privacy, security, confidentiality & trust?
 - Harnessing non-pecuniary incentives arising from personal data e.g. personalised products?
 - Imposing a system of production (e.g. transfer of assets, payments through platform itself, process) e.g. topcoder
 - Enforcing novelty & cultural themes
 - ‘community’ management: students, donors, for a mature & stable MSP

1st Mad Hatters' Tea Party

Thursday, July 17, 2014 from 1:45 PM to 6:00 PM (GMT)
Impact Hub Westminster, 1st Floor, New Zealand House, 80 Haymarket,
London SW1Y 4TE

Email Share Tweet Like You and 6 others like this.

- Arrival/signing in of guests
- Welcome and Introduction to the HAT
- The Art of the Possible: Economic and Business Models on the HAT By Irene Ng
- Q & A/Discussion
- Refreshment Break
- HAT – Personal Data architecture: Technical Presentation & Consultation By Xiao Ma
- Q & A and Open Discussion on Economic and Business Models of the HAT Itself
- Refreshments and Networking

Online discussion and consultation to join the HAT community

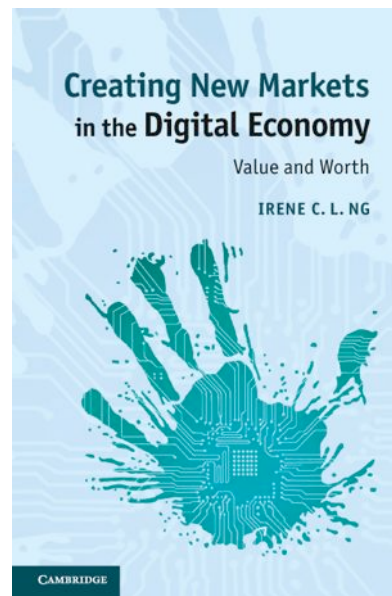
- Begins this week moderated by Dr Graham Hill
- Join the C-HAT discussion at <http://hubofallthings.com/join-the-hat-revolution/discussion-forum/>
- Continues till the 1st Mad Hatter's Tea Party

Shameless plug:

For more information on this, buy the book

Creating New Markets in the Digital Economy

- Out on Amazon Kindle and in book stores



Thank you