

# **Digital Media & Content Industries:**

**A study of the impact on household production**

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# Digital Media & Content Industries

**INTERNET & BROADBAND ENABLED:** FILM, RADIO, TV, VIDEOGAMES, BOOKS, MAGAZINES, NEWS, DATABASES, SEARCH, SOCIAL MEDIA ...

**FOR:** SHOPPING, ENTERTAINMENT, TRAVEL, CARE (OLD & YOUNG), HEALTH (MENTAL & PHYSICAL), COMMUNITY, FOOD, HOUSEHOLD MAINTENANCE ...

# [1] Feminist economics of the household

- Waring/Ironmonger on valuing household **production** (time, input-output)
  - Gendered division of labour
  - policy regarding fair treatment (pensions, OHS, child care...)
  - Satellite accounts
  - ***Static/allocation approach***
- Less attention to **innovation & boundary dynamics**
  - What is growth of household productivity?
  - Technology adoption for production
  - substitution from market/govt sector into household production
  - What skills & capabilities required?
  - Integrating households into ***knowledge & innovation processes***

## [2] impact of digital media & content industries on productivity growth

- Productivity paradoxes
  - (Paul David 1999: data, IT skeptic, LR optimism)
- Searching for impact in market/firm space
- Households ignored, except as consumer surplus
- Digital technology improves households information/search/production capabilities
- **INSOURCING**: Produce same things better & produce new things

# What we want to know

- What is the effect of **digital transformations**
- ... on the **productivity** of the **household & non-market sector**

# Why do we want to know this?

“We can see the computer age everywhere except in the productivity statistics” Solow (1987)

- We think a lot of the benefits of digital technologies go to households
- But we want to know how that happens

# BCG

THE BOSTON CONSULTING GROUP

## Culture Boom

How Digital Media Are Invigorating Australia



# \$24 billion consumer surplus

– \$3000 per Australian household

Same as revenue generated by sector

\$24.8 bn in 2011

We think the digital  
transformation is driving  
**household productivity gain**  
(not consumer surplus)



## Consumer surplus

E Brynjolfsson, J Yu, M Smith (2003) 'Consumer surplus in the digital economy: estimating the value of increased product variety in online booksellers' *Manag. Sci.*, 49: 1580-96.

*Idem* (2006) 'From niches to riches: the anatomy of the long tail' *Heinz Research*, paper 51.

BCG (2012) *Culture Boom*

## Household productivity

G Becker (1965) Theory of the allocation of time' *Econ. J.* 75: 493-517.

D Ironmonger (1996) 'Counting outputs, capital inputs & caring labour' *Fem. Econ.* 2(3): 37-64

A Lindbeck & S Wikstrom (2003) 'E-exchange and the boundary between households and organizations' *Kyklos*, 56(3): 315-40.

# On the changing relative production efficiency of households

- Boundary between households, firms & govt is dynamic
  - Technology, organization, scale pushed production out of households into firms 19-20C
  - Welfare state pushed production out of households into govt in 20C
- Does digital technology push production back into households?
- Does **Baumol's law** shift production back to households?

# theory

- model of household production
  - Becker (1965) in 'A theory of the allocation of time'

households derive utility from consuming 'commodities',  $Z_i$

- $U = U(Z_1, \dots, Z_m)$
- $Z_i =$  'security', 'entertainment', 'children's well-being'

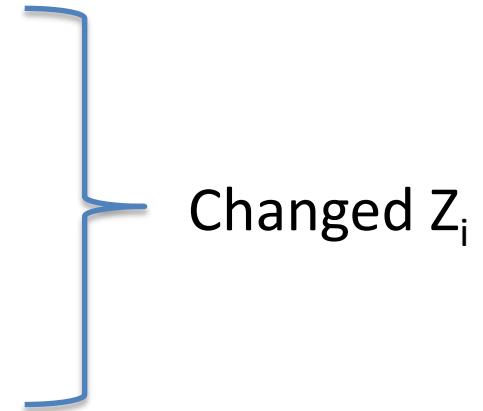
# theory

- $Z_i = f(X, t, S)$
- Each  $Z_i$  has a production function of:
  - $X$  is the market goods used to produce the commodity
  - $t$  is the person's own time input
  - $S$  is the person's human capital

# theory

$$Z_i = f(X, t, S)$$

- Innovation in new digital technologies & new content affects range and price of **X**
- ICT makes more efficient use of **t**
- 'digital literacy' affects **S**



# method

Identify/measure changes in  $X, t, S$   
Identify/measure changes in  $Z$

# method

1. theoretical analysis of expected changes in household  $U = f(Z)$  due to changes in inputs ( $X$ ,  $t$ ,  $S$ ) from digital media and content
1. Test predictions using Australian survey data
  - **ARC DT COE survey**: household level data on patterns of time use and consumption over digital media output and content
  - **HILDA panel**: Test household production function model predictions against

# Key project within proposed *ARC Digital Transformations* Centre of Excellence

- large-scale ‘town-study’ (two waves 5 years apart)
- using a range of survey, ethnographic and micro-econometric techniques,
  - Ethnographic research on household consumption & use practices
  - Time use/ diary/
  - Household budget analysis
- On changes in the **range of household production** and of the **productivity of households** in consequence of digital transformations

# Key aspects: Theory

- Substitution to/away from household production
  - Changes in household production set (Z)
- Inputs from market/effect of innovation (X)
- Time use (t), changing relative prices/opp cost
- Human capital/digital literacy (S)
  
- Does digital media make households more productive? With what consequence?



# Key aspects: method

- New large scale survey
  - Survey design
  - Link to HILDA et al
- Identification & measurement (!?)
  - Changing household production sets & practices
  - Investment in household capabilities

Has the growth of digital  
media & content industries  
caused household  
productivity to change?

If so, how and with what effect?