



**NEW ZEALAND INSTITUTE FOR THE STUDY  
OF COMPETITION AND REGULATION INC.**

Commentary on  
**The Need for Speed: Impacts of Internet  
Connectivity on Firm Productivity**

Grimes, Ren & Stevens (2009)

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# IMPORTANCE OF THE RESEARCH

## Internationally unique

- first study using specific firm data
  - rather than general population-wide broadband diffusion
- broadly comparable in effect with Brynjolfsson & Hitt's papers on ICT adoption and firm level productivity

## Interesting/important to use NZ firm-level data

- internationally very high and very early firm-level adoption of broadband
  - 20% of all significant business enterprises in 2003 (Howell & Obren, 2003)
- relatively fast entry-level ADSL quality
  - 2Mbps standard in 1999, cf. norm of 256kbps/512kbps in other countries



# KEY FINDINGS

Broadband-using firms more productive than non  
broadband-using firms

But fast broadband firms no more productive than  
ordinary broadband firms

Should we be surprised by these results?



# HOW DO PRODUCTIVITY GAINS ACCRUE?

## One-off adjustment?

- adopt single new application in year 1
- benefits accrue in that year
- no additional benefits in subsequent years
- more likely if firms use only limited bb-mediated applications (e.g. websites, email, electronic banking)

## Sustainable productivity growth?

- from creating multiple new products/applications year after year that use the new technology (as part of core business)
- more likely if firms make and sell digital goods or consume large quantities of them as inputs to production (e.g. media, banks, insurance)

## Gains to consumers/suppliers?

- not captured in firm-level data



# DOES *FASTER* BB MAKE ME MORE PRODUCTIVE? I

Faster BB saves time (but whose? and how much?)

Matching supply and demand

- having a Ferrari does not make me much more productive if all I need is a once-weekly trip to the corner dairy to buy bread and milk (frequency)
- having a motorway going past only increases my productivity if I make things that can be moved by motorway (opportunity)
- why pay a premium for 60-minute deliveries if 24-hour will do? (time-criticality)

Most firms deal in physical goods

- limited info in and out
- internal co-ordinating information most important
- info transport only very small proportion of total value-add
- productivity gain from faster bb may be +ve but still negligible



# DOES *FASTER* BB MAKE ME MORE PRODUCTIVE? II

## Internal production processes

- but broadband will make me more productive if I have been time-constrained in receiving high-volume information inputs/transmitting large quantities of high-volume information outputs vital for my production processes/consumers
- case study: Pacific Radiology

## More information not always better information (GIGO)

- time taken to filter more irrelevant information

## Greater exposure/electronic markets not always positive

- electronic supply-chain management tends to advantage strong purchasers over weak suppliers
- specialised markets – buyers and sellers already well-linked

## Aggregators/specialists may do the job better than a firm



# LINKING BUSINESS CASE WITH FASTER BB

Will have productivity paybacks for some firms

But only if carefully thought through with regard to existing and future information flows in and out of firm

23% of firms with broadband don't know what sort of broadband they are buying!



# FUTURE RESEARCH OPPORTUNITIES

Separate analysis of information-intensive industries

- FIRE
- medical
- media

Time series analysis

- will separate out one-off adjustments from sustainable productivity growth

Regional comparisons

- spillover effects from localised factors?

