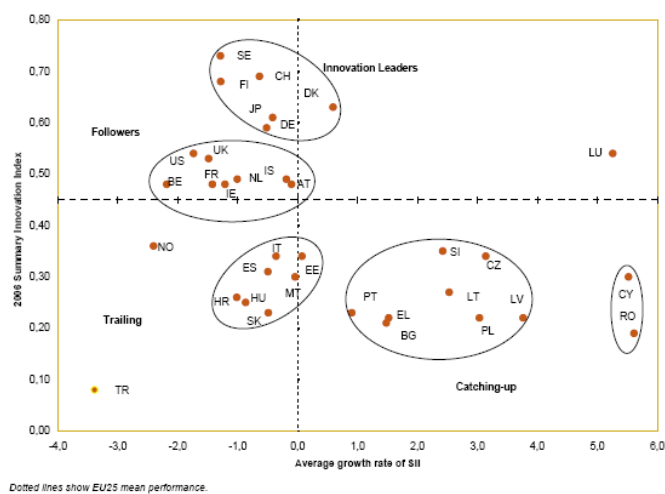


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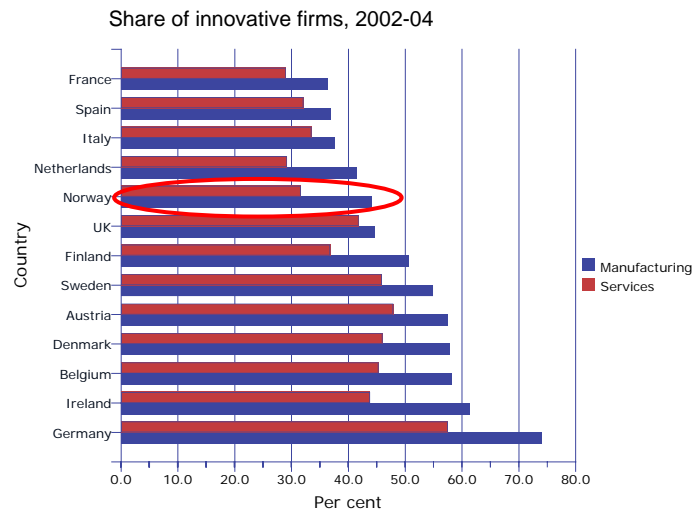
Dr. Jonathan Reynolds
University of Oxford

The importance of innovation



Source: European Innovation Scoreboard (2006).

The nature of the problem?



Source: Eurostat, 2007

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Innovation in Services: outline

- What are services and how are they different?
- Conceptualising and measuring service innovation: what are the key ideas?
 - Three waves of thought
 - Four key features of service innovation
- The service innovation process
 - Three different approaches
 - Traditional R&D
 - Fast market entry
 - Accidental innovation



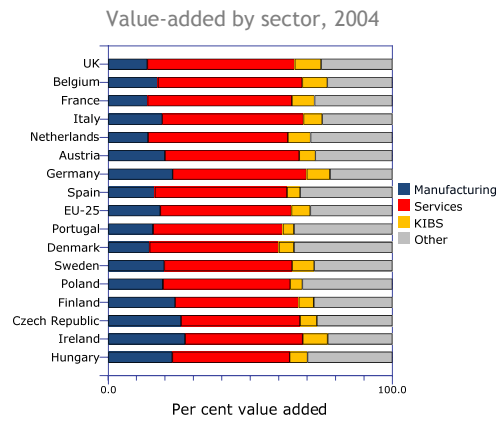
"The March of Innovation"

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The scale of services

- Services have long had a “*Cinderella status .. Being neglected and marginal.*” (Miles, 2000).
- Services account for over 53.8% of total value added in EU-25 economies compared to 18.3% in manufacturing
- Growth in services has outpaced overall economic growth in the EU-25 and OECD areas
- Services are playing a greater role in business cycles
- Knowledge-based services, linked to information technology, are an important engine in overall growth
- Compared to manufacturing, services appear to have a lower R&D intensity. Are they less innovative or do they innovate differently ?



What are services?

- The ‘IHIP’ taxonomy
 - *Intangibility*
 - “an ambiguous and highly limited concept”
 - *Heterogeneity*
 - But what about machine-intensive service operations?
 - *Inseparability*
 - Customers and suppliers as ‘partial employees’?
 - But many services are separable
 - *Perishability*
 - Similar strategies available as for manufacturing
 - Information-based services?
- Alternative paradigm: ‘non-ownership’
 - Implications of the rental/access paradigm
- Role of technology in transforming services - capital substitution for labour

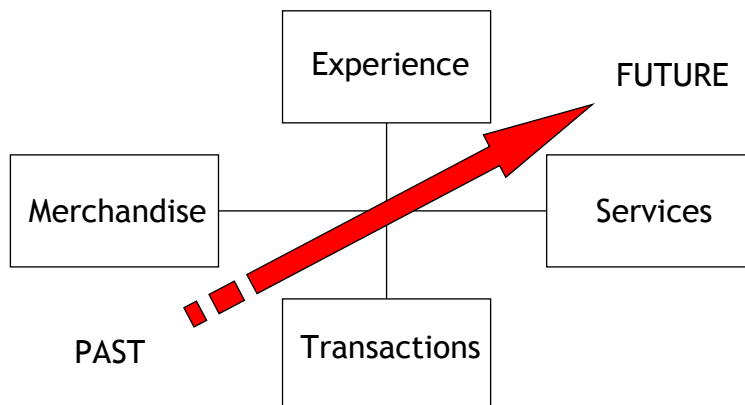
Services, goods or products?

- Tangible dominant
- Intangible dominant
- Examples
 - Iron ore; unrefined oil
 - Management consultancy; counselling



Services and/or service are increasingly used to differentiate goods from each other

Changing customer expectations?

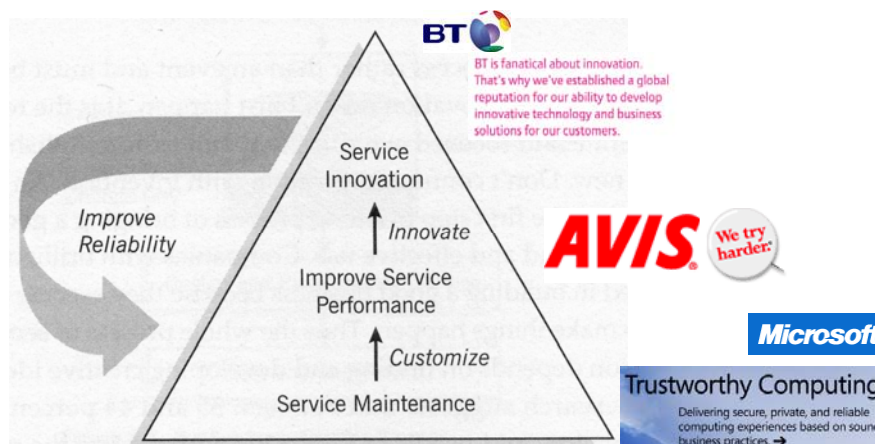


Summing up the nature of services

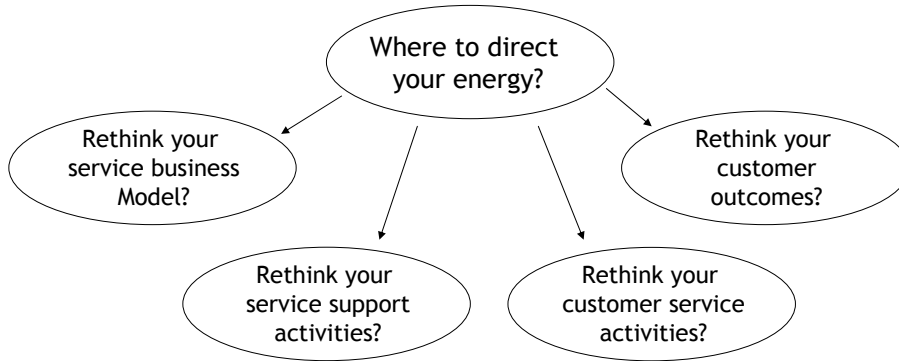
- All firms, not just service firms, lie along a continuum between tangible-dominant and intangible-dominant offerings
- Service firms are heterogeneous
- The consumption and production of many services can be simultaneous
- Customers can be involved with the process of creating some services: 'co-creators of value'
- Actual customer experience is subject to prior expectations and perceptions; achieving consistency of experience is a challenge
- Hence the main emphasis in these circumstances is often on the management of existing services rather than service innovation



The Service Development Hierarchy



Where to direct your energy?



Source: Gustafsson & Johnson, 2003

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Where to direct your energy?



Typology Types	Examples
Business Models	<ul style="list-style-type: none"> Outsourcing and internationalisation of services. Developing services from a manufacturing base. Finance and insurance services offered by supermarkets.
Customer Interfaces	<ul style="list-style-type: none"> Electronic forms of interface as service delivery mechanism including ATM's and on-line purchasing. Shift towards more flexible opening hours. E-tracking of orders and deliveries.
Service-Products	<ul style="list-style-type: none"> New services built around complementary enabling technologies e.g. e-Banking. Bespoke new services developed for individual customers. Development of e-training courses by educational establishments.

Source: Forfás, 2006

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WHAT ARE THE KEY IDEAS?

Three waves of thought about service innovation

- **Assimilation**
 - Innovation in services is fundamentally similar to that in manufacturing because it is driven by it (e.g. Pavitt, 1984)
- **Demarcation**
 - Services and their innovation activities are highly distinctive and fundamentally different from those in manufacturing ('the Lille School'; Gallouj et al, 2000)
- **Synthesis**
 - Services and manufacturing do not follow entirely different approaches to innovation, but services undertake types of innovation now seen as being relevant to other sectors of the economy (e.g. Foss & Knudsen, Tether, 2004)

(1) Assimilation

- ‘Supplier-dominated’ perspective
- Pavitt classifies all private services as passive adopters of externally developed technologies (Pavitt, 1984)
- Services are ‘uninteresting with respect to innovation and technological change’
- Apart from a few ‘peculiar services’ (computer services & telecoms)
- But there are rather more peculiar services than was anticipated! (Miozzo & Soete, 2001)
 - Science & technology-based services
 - Technical consultancy
- And some technologies can be produced interactively between users and producers

(2) Demarcation

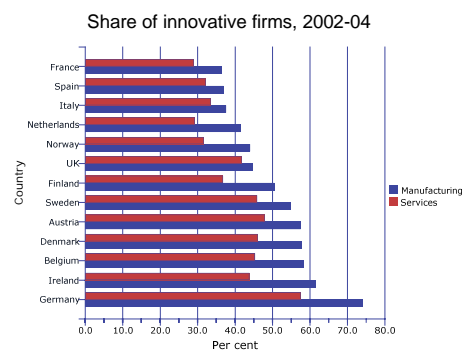
- The ‘Lille School’ (Gallouj, Gadrey, Djellal) argued that innovation in services is fundamentally different in nature to (archetypal) innovation in manufacturing
- Previous studies have
 - Overlooked the important contributions of services to manufacturing; and
 - Some of the most important dimensions of innovation behaviour within services (intangibility, interactivity)
 - Authorship of innovation unclear
 - Service events often unique - difficult to differentiate between service variations and innovations
- Services far from dull providers of standard activities, but are instead dynamic & fluid, constantly changing to meet customer requirements through a mixture of ‘hard’ and ‘soft’ technologies

(3) Synthesis

- Some convergence between the two views has occurred
 - E.g. Multiple patterns of innovation have been identified that are not all highly interactional
 - Many service providers engage in mass customisation
 - Innovation seen not only in the creation of new technologies, but in their creative use
- First two approaches present an exaggerated picture in respect of a small group of exceptional services (KIBS)
- The breadth of services makes it difficult to generalise
 - Strategic positioning choices by service firms can imply quite different patterns of investment in 'hard' and 'soft' technologies
 - E.g. retail financial services & logistics
- But is it possible to use the same indicators to measure innovation in manufacturing and services firms?

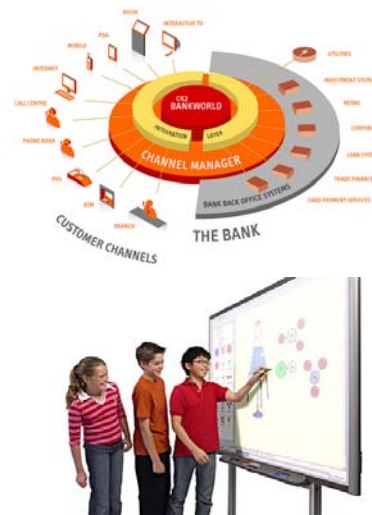
The challenges of measurement

- The nature of innovation in services is inadequately measured
 - E.g. Community Innovation Survey
- Traditional metrics based on model of science-based, hard R&D spend & intensity, that is increasingly less relevant
 - Attempts to measure service innovation better being made, but
 - Indicators risk being largely subjective
- How to measure the equivalent of the 'inventive step' and resulting 'meaningful improvement' in service innovation?



Four key features: (1) 'hidden' innovation

- Innovation activity that is not reflected in traditional indicators
- Doesn't just apply to service innovation
- Types of hidden innovation
 - I: identical to traditional indicators, but not measured e.g. the development of new technologies in oil exploration
 - II: without a major scientific or technological basis: service innovation can entail 'wider' innovation
 - III: created from the novel combination of existing technologies and processes e.g. banks' back office IT and internet banking
 - IV: 'everyday' innovation. Locally developed, small scale innovations that take place 'under the radar' e.g. classroom teaching



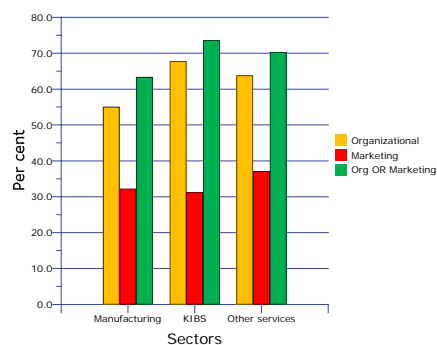
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Wider innovation

- Focus on hard R&D blinds us to the wider nature of innovation in service organizations
- Higher proportion of non-technological innovation
 - Organizational innovation
 - Marketing innovation
- E.g. construction
 - Developing new working practices through collaborative problem-solving
- E.g. retailing
 - New offer-related formats such as hypermarkets, lifestyle stores, online activities

% firms introducing non-technical innovation



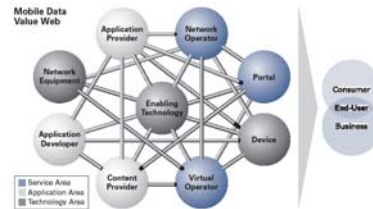
Source: CIS4, New Cronos. For EU27 (excl UK, FI, LT, SL, SW)

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Four key features: (2) 'open' innovation

- Co-creation upstream with suppliers OR downstream with customers
- Upstream:
 - Service innovation draws more on a 'hinterland' of related sectors and suppliers
 - As potential offerings become more complex and varied, so do the relationships necessary to produce them
 - E.g. Construction and ICT project management tools; mobile phone data applications
- Downstream:
 - Where value occurs in complex nets rather than chains, the goal of business is not so much to make or do something of value to customers, as to mobilise customers to take advantage of proffered density and create value for themselves
 - E.g. Virgin Mobile USA
- Role of intermediaries as 'Innovation hubs'
 - If the key to creating value is to co-produce/co-create offerings that mobilise customers - where is competitive advantage to be found?
 - ... In the ability to conceive the entire system and make it work.



We do our part and
you do yours, and
together
we save money.

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Open innovation: Virgin Mobile USA

- Premise: Virgin target 15 - 24 year olds
- How did they go about it? Used online marketing website for interviews (MarketingSherpa)
- Results: In 20 months from July 2002, Virgin attracted 1.7 million customers, from a segment which was neglected in the US. (Now 5mn).
- What did they learn?
 - Desire for personalization
 - Love for music
 - Dynamic changes in taste
 - They are the "household chief technology officers" - enjoy figuring out new features
 - Impressed by viral applications & use messaging to keep in touch
 - They know they are being marketed to, which means no gratuitous use of slang & efforts to appear too trendy
- Some applications delivered:
 - Rescue Ring (allows the user to have pretend conversations)
 - Studio V
 - Sugar Mama



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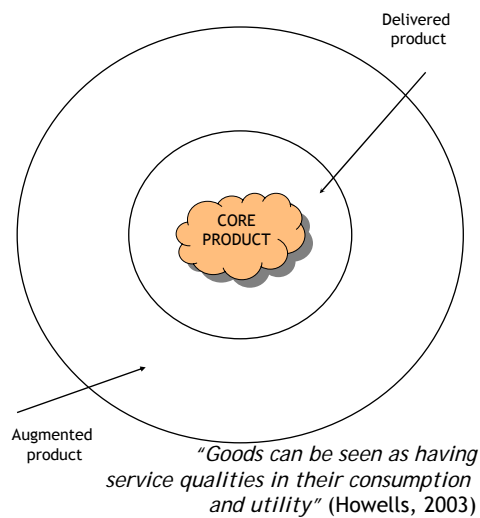
Four key features: (3) low appropriability

- Customer-facing service innovation can be easily copied
- Knowledge ‘spillovers’ caused between firms leading to erosion of competitive advantage
- Service firms are less likely to employ formal mechanisms to protect IP
- Informal mechanisms (tacit knowledge, secrecy) may be preferred
- Continuous incremental change may be preferable nature of innovation: ‘every little helps’



Four key features: (4) ‘encapsulation’

- Services can play a key intermediary and conduit role in the innovation process
- Services increasingly ‘encapsulate’ or act as ‘wrappers’ to goods and resources
 - E.g. vehicle manufacture
 - E.g. aerospace industry
- This can happen in two ways
 - Offer manufactured product along with closely aligned service products in a single package
 - Proposition redesigned in relation to new extended buyer goal: “service solutions”



Real encapsulation? ... or not?



After-sales service



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- ▶ Guarantee declaration

SOLUTIONS

"Liverpool 3, Total Network Solutions 0"
– Welsh football club, formerly Liansantffraid FC, sponsored by local computer company

"Syngenta believe in delivering better food for a better world through outstanding crop solutions" – GM crops

"Avanti has been providing screenmedia solutions to retailers and advertisers since 1996" – TV screens

"Brakes, the UK's leading foodservice solutions provider" – food

"Dagenham Motors: Imminent and extensive franchise refurbishment at several of our sites across the south has led to the need for a short term used vehicle solution." – second hand car sale

"Yellow & Green deliver innovative and creative solutions to marketing solutions" – brochures

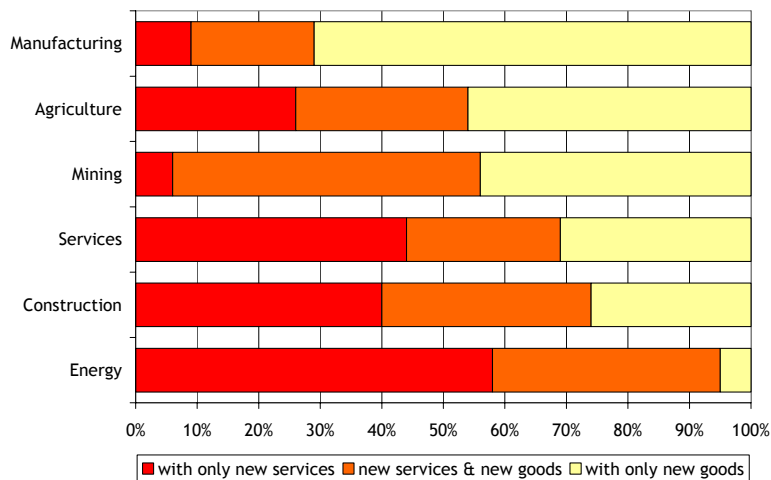
All submitted by readers

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Services innovation is therefore relevant for all firms

Share of product innovators with new services/and/or/new goods, Netherlands



Source: Hollanders & Arundel, 2007

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- Service firms will
 - Be less likely to acquire knowledge via ‘hard’ R&D and hardware acquisition; more likely to use ‘soft’ sources such as suppliers or customers
 - Claim that their innovation strengths lie in ‘soft’ attributes (workforce skills/co-operation practices) than ‘hard’ advantages (efficiency of production/R&D knowledge)
 - have greater difficulty in determining the orientation of their activities between products, processes and organisational change
 - Be more likely to claim an organisational orientation to their innovation than manufacturers
 - Be less likely to claim a product or process orientation than manufacturers
- Consequences for measurement
 - Service innovation may be relevant for all firms
 - Much harder to formally recognise and measure

Source: Tether, 2004; Reynolds, 2007

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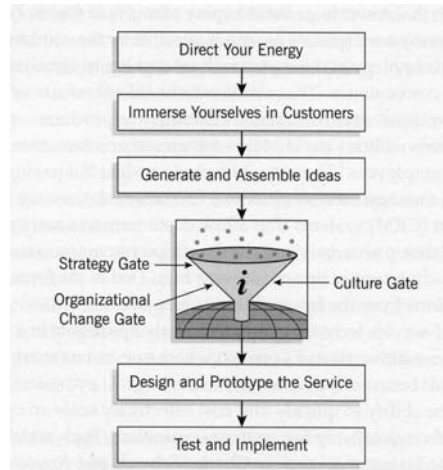
THE SERVICE INNOVATION PROCESS

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Service innovation process

- Some choices must be made among various market and technology opportunities
- Choices must fit within overall business strategy
- Choices build upon established areas of technical and marketing competence
- The organization works directly with customers along the way

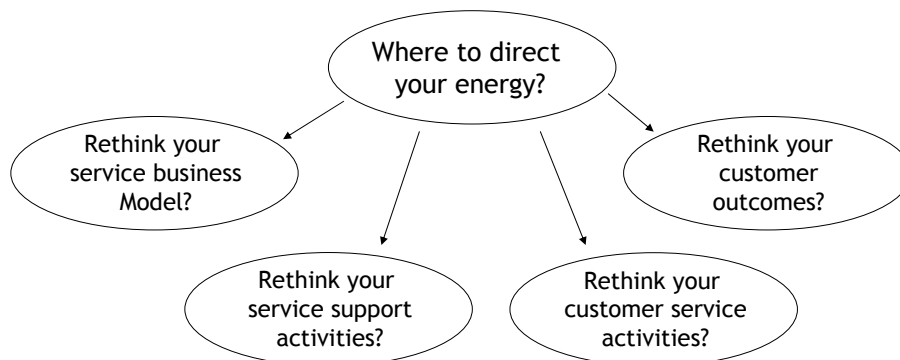


Source: Gustafsson & Johnson, 2003

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Where to direct your energy?



Source: Gustafsson & Johnson, 2003

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Different approaches to service innovation

- Traditional systematic R&D
 - Sequential service development
 - Market research; service ideas; concept development; testing; formulation; launch
 - Simultaneous development of service concept & revenue logic
 - E.g. financial services
- Fast market entry
 - First mover advantage
 - Service idea; quick launch
 - Iterative development with customers
 - E.g. Google mashups
- Accidental innovation
 - Service innovations can be hard to discover
 - Emerge through evolving practice
 - Later formalised
 - E.g. package redesign for delivery



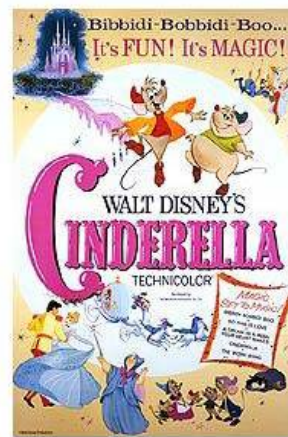
Source: Forfás, 2006

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Conclusions

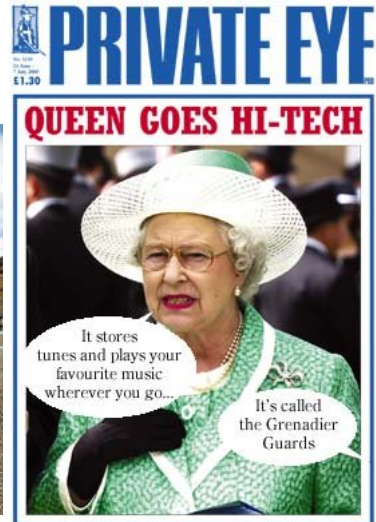
- Not one, but many, innovation patterns in services
 - Some innovate by copying their rivals
 - Or draw from a 'hinterland of ideas' by means of open innovation
 - Or by developing 'off-the-shelf' technology
 - Or by melding existing technologies and matching those with organizational change to deliver innovative services
 - Others undertake genuine innovation, and
 - Commit substantial resources to innovative activities
- The analogy with 'Cinderella' is not wholly appropriate
 - Neglected by statisticians and economists, but not in practice



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Why use a new product,
when a traditional
service will do?



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