

# The pricing of Public sector information (PSI)

## *Some economic insights*

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January 2011



**Bureau  
d'économie  
théorique  
et appliquée  
(BETA)**

UMR 7522

***Research sponsored by APIE***



# Our departure point

- ❑ Most economic studies put forward ***gratuity for all kind of PSI*** as the optimal pricing for PSI (among others, the well known « *Cambridge study* », Newbery *et al.*, 2008 )
  - It is a direct application of the condition of marginal cost pricing
  - All things being held equal, it maximizes the rate of reuse
  
- ❑ Yet, it is a simplistic treatment of the topic
  - No (or few) discussion on the nature of PSI
  - No (or few) discussion on the role of public administration in the diffusion process
  - No (or few) discussion on the willingness to pay of users (WTP)
  - No (or few) discussion on the users' ability to reuse PSI (absorptive capacity)
  - No (or few) discussion on the financing of the diffusion

# Our objective

- ❑ Mobilize economic theory in order to introduce those issues with respect to the pricing of PSI
- ❑ Among others, we propose that pricing should pay attention to:
  - The nature of PSI
  - The nature of users
  - The nature of the market
  - The existence of a budget constraint for public administration
- ❑ In other words, we propose that the discussion should go beyond the issue of the price and focus on the quality of the diffused data

# The nature of PSI

## The DIK model:

- ❑ Raw data: Stems from mere observation or measurement / Not treated by human beings
  - Ex: a number or a color
- ❑ Information: Collection of data arranged in order to send a message (to give sense to the data)
  - Ex: The maximum weight supported by this elevator is 500kg
- ❑ Knowledge: Require a cognitive reappropriation of the information by an individual who filters and organizes it in order to improve its understanding
  - Ex: This problem of overweight is not too damaging except if...
  
- ❑ DIK and cost of reproduction: marginal cost is not zero in the case of knowledge!

# The nature of PSI (2)

## The DIK model adapted to PSI

- Raw data
- Data enriched with respect to format
  - Digitalization, website, etc.
- Data enriched with respect to content (information)
  - Explanatory notes, assemblage with other data, etc.
- Knowledge
  - Personal assistance, mentoring, etc.
  
- The example of Legifrance and legal PSI

## The nature of PSI (3)

# Implications for the diverse costs

- ❑ Transformation cost (fixed cost)
  - Usually not nil and potentially high (both for format and content enrichment)
  - Increasing with the degree of enrichment
    - i.e. Cannot neglect the question: Who pays?
- ❑ Marginal cost
  - Not nil in the case of knowledge
- ❑ Absorption cost for users
  - Decreasing with the degree of enrichment

## The nature of PSI (4)

# Gratuity does not always mean wide diffusion

- ❑ The discussion on the nature of PSI allows broadening the debate on their reuse beyond the issue of price
- ❑ The assumption that gratuity implies large diffusion neglects:
  - The problem of learning
  - The existence of specific know-how
  - The issue of absorption costs
- ❑ The nature of the PSI that are released must be part of the discussion
  - To release for free raw data might be counterproductive
- ❑ It is necessary to decouple (at least in part) the issues of price and accessibility
  - The example of free/open source software

# The nature of users

- ❑ The nature of users (utilization) affects directly their willingness to pay (WTP), i.e. the degree of reuse
  - Commercial versus non-commercial reuse
  - Research exemption
- ❑ WTP depends on expected profit:
  - Proportional versus lump-sum payment
  - The paradox of the argument: “gratuity is necessary to generate economic activities”
- ❑ Critical implication: In many cases, positive pricing will not reduce the reuse (importance of price discrimination and market fragmentation / prevent free-riding)
  - Only consequence: a transfer of welfare from firms to governments
- ❑ Arguments such as “if you want us to pay for it, you will kill our business” are often opportunistic (*ex. Genentech and the Cohen-Boyer patent*)



# The nature of the market

- ❑ WTP depends on expected profit
  - ❑ i.e. It is largely influenced by the uncertainty of the project
- ❑ Important to take the distance to market and the uncertainty under consideration
- ❑ Distinction between existing and mature markets and non-existing, emergent markets
  - Possible to setup licenses which evolve in time
  - Compatible with the existence of network effects

# Summary: WTP and PSI

		Nature of PSI			
		Raw Data (D)	Data enriched Format (D <sub>F</sub> )	Data enriched Format and Content (I)	Knowledge (K)
Commercial reuse (internal or resale)	Low uncertainty (low distance to market)	Average	Average- strong	Strong	Very strong
	High uncertainty (important distance to market)	Very weak	Weak	Average-weak	Average
Non commercial reuse		Very weak	Very weak	Very weak	Very weak

Caution: In any case WTP is bounded upward, so price must remain reasonable

# The existence of a budget constraint

- ❑ Simple argument: The release of PSI is welfare increasing so governments should not hesitate to pay for it

## Some naïve comments:

- Many other expenditures are welfare increasing: Health, education, etc.
  - Tax collection is welfare decreasing
  - States have no money
- ❑ It is reasonable to envisage the existence of a budget constraint, i.e. governments will have to make choices. They cannot finance everything

# Un modèle de tarification optimale

	<b>Raw Data (D)</b>	<b>Data enriched Format (D<sub>F</sub>)</b>	<b>Data enriched Format and Content (I)</b>	<b>Knowledge (K)</b>
<b>Transformation cost for public administrations</b>	0	+	++	+++
<b>Marginal cost</b>	0	0	0	Positive
<b>Absorption costs for users</b>	++++	+++	++	+
<b>Marginal cost pricing</b>	$P=0$	$P=0$	$P=0$	P positive
<b>Efficiency loss if discriminatory pricing</b>	Strong	Average	Weak	Not relevant
<b>Optimal pricing without budget constraint</b>	$P=Mc=0$	$P=Mc=0$	$P=Mc=0$	$P=Mc$ (positive)
<b>Optimal pricing with budget constraint</b>	$P=0$	$P=ACT$ (positive)	$P=ACT$ (positive)	$P=Mc$ (positive)

# Average cost of transformation

## □ How to compute it?

- Difference between total cost and cost of ISP production within the mission of public service
- In this case, all the costs that are engaged in the case of the public service mission do not enter in the computation of the transformation cost

## □ And if the transformation is done in the case of a public service mission?

- Distinction between « upstream » et « downstream » PSI
- In the second case one may envisage sharing those costs

## □ In any case, it is important to note that ACT are far below total average costs, i.e. price should remain low (critical in a logic of reuse)

# Conclusion: Where should the role of public administration stop?

- ❑ Pricing and reuse of PSI: We need more theoretical and empirical works
- ❑ A combination of gratuity and positive pricing, based on a balanced discrimination, may allow to reconcile the objectives of financing and diffusion
- ❑ Open question: Where should the public go with respect to the activity of PSI diffusion?
  - Until the activity of knowledge transfer (consultancy, etc.)?
  - Let everything to the private sector?
  - Public administrations benefit of some advantages over firms