

Selling Bits: A Matter of Creating Consumer Value

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Selling Bits: Issues

- Selling bits = selling a *licence to use* bits (e.g. Music, Video, Software)
- The *problem*: Illegal copying of music happens on a larger scale right now, video comes soon
- The *solution* proposed by the music industry:
 - Effective?

Protect content:

- by encryption
- by watermarking
- by law



Business Solutions for Selling Bits

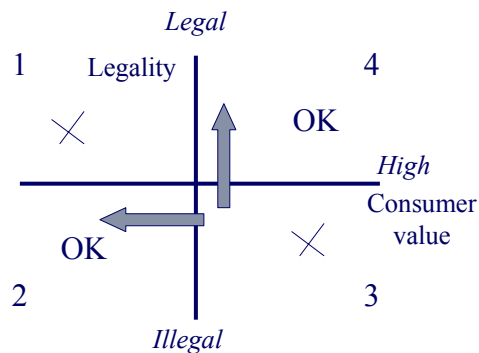
- *Updating & versioning*: effective for *time-dependent* content
- *Bundling*: effective but sales of bits is *dependent on other sales*
- Other solution: Exploitation of the *value* of the licence *itself*, e.g.
 - *Fast selection*
 - *Fast delivery*
 - *Beauty*
- **Goal**: $\text{Value}_{\text{consumer}}(\text{Legal}) > \text{Value}_{\text{consumer}}(\text{Illegal})$

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Legal and Illegal Business Models



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How to Calculate Consumer Value?

- Approach:
 - A framework of value based on Holbrook applied to selling licences for the use of bits
 - Valuation of what-if scenarios

Holbrook	<i>Extrinsic</i>	<i>Intrinsic</i>
<i>Active</i>	Efficiency (I/O function, convenience)	Play (fun)
<i>Reactive</i>	Excellence (quality)	Esthetics (beauty)

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Calculation of Consumer Value for Selling Music

$$ConsumerValue = \frac{\sum_{i=1}^n receipt_i}{\sum_{j=1}^n sacrifice_j}$$

	<i>Receipt</i>	<i>Sacrifice</i>
<i>Out-of-pocket costs</i>		Datacomm.
		Price
<i>Holbrook factors</i>	Presentation quality	Convenience
	Interactive track play	
	Track beauty	

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Evaluating Consumer Value

- License: *Listen once to a selected music track*
- Scenario A: Yuppie
 - Enough monetary resources, lack of time
- Scenario B: Student
 - Scarce monetary resources, enough time
- For both scenarios:
 - Obtain music legally
 - Obtain music illegally
- Assumptions:
 - Legal shop has more bandwidth to consumer (co-location)
 - Legal shop has a more efficient track selection mechanism

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Results of Evaluation

- Yuppie and student favour the legal case.
 - Price for a license = \$ 0.10
- But, *what-if* ¹:
 - a) Bandwidth_{legal} = Bandwidth_{illegal}: illegal case
 - b) Overall bandwidth increases dramatically: illegal case
 - c) Selection time_{illegal} increases + b: legal case
 - d) Inconvenience fee is non-linear +b + c : legal case
 - e) Repeated listenings: after 3 listenings: illegal case

¹for the yuppie scenario

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Conclusions

- Use of framework and 'what-if' approach:
 - Holbrook aspects help to find quantifiable value aspects
 - Quantified reasonings can be build using these aspects, consumer profiles and environmental aspects
- Exploitation of consumer value:
 - *Short term*: exploit differences in end-to-end bandwidth (co-location)
 - *Long term*: enlarge gap of search time
 - Price per track: *low* and *non-linear*

