Cloud storage pricing: a comparison of current practices

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HotTopiCS in Cloud Services
Prague · 20-21 April 2013
Unveiling the complexity of pricing schemes
Unveiling the complexity of pricing schemes

- Cloud storage solutions are spreading...
Unveiling the complexity of pricing schemes

- Cloud storage solutions are spreading...
- ...and so pricing schemes...
Unveiling the complexity of pricing schemes

- Cloud storage solutions are spreading...
- ...and so pricing schemes...
- ...but how can customers make sense of such variety?
Unveiling the complexity of pricing schemes

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- ...and so pricing schemes...
- ...but how can customers make sense of such variety?

How do we compare pricing schemes?
Unveiling the complexity of pricing schemes

- Cloud storage solutions are spreading...
- ...and so pricing schemes...
- ...but how can customers make sense of such variety?

How do we compare pricing schemes?
Can we focus on the cheapest ones?
Contents

- Price survey
Contents

- Price survey
- Pointwise comparison
- Overall comparison and Pareto dominance
Cloud providers under analysis
Cloud providers under analysis

Google Drive

Amazon

Dropbox

SugarSync

IDrive

Carbonite

Symform

Mozy
## Pricing models

<table>
<thead>
<tr>
<th>Volume</th>
<th>Price</th>
<th>Volume</th>
<th>Price</th>
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<td>(1)</td>
<td>(2)</td>
<td>(2)</td>
<td>(3)</td>
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- **Amazon**
- **Google Drive**, **IDrive**, **SugarSync**, **Mozy**, **Dropbox**, **Carbonite**
Pricing models

Block Rate Pricing

Bundling Pricing

Amazon, Google Drive, IDrive, SugarSync, Mozy, Dropbox, Carbonite
Pricing models

Block Rate Pricing

Bundling Pricing

<table>
<thead>
<tr>
<th>Volume</th>
<th>Price</th>
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<tbody>
<tr>
<td>$q^{(1)}$</td>
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<tr>
<td>$q^{(2)}$</td>
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<tr>
<td>$q^{(3)}$</td>
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Amazon, Google Drive, IDrive, SugarSync, Mozy, Dropbox, Carbonite
Pricing models

Block Rate Pricing

Bundling Pricing

Volume

Price

q(1) q(2) q(3)

Volume

Price

q(1) q(2) q(3)
Pricing models

Block Rate Pricing

Bundling Pricing

Amazon
Pricing models

Block Rate Pricing

Volume

Price

Amazon

Bundling Pricing

Volume

Price

Google Drive, IDrive, SugarSync, Mozy, Dropbox, Carbonite
## Unit prices

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<th>Storage space [TB]</th>
<th>Unit price [€]</th>
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Unit prices
The two-part approximation
The two-part approximation

- Pointwise comparison is correct...
The two-part approximation

- Pointwise comparison is correct...
- ...but does not reveal overall properties...
The two-part approximation

- Pointwise comparison is correct...
- ...but does not reveal overall properties...
- ...which can be revealed by an approximation model
Which approximating model?

The two-part tariffing scheme is the simplest of nonlinear pricing:

\[ p = f + v \cdot x \]

The parameters can be derived through a least squares approach.
Which approximating model?

The two-part tariffing scheme is the simplest of nonlinear pricing
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The two-part tariffing scheme is the simplest of nonlinear pricing

\[ p = f + v \cdot x \]

The parameters can be derived through a least squares approach
A comparison through the two-part approximation
A comparison through the two-part approximation

Consumers

Business

We can adopt a Pareto dominance approach. Schemes with higher fee and higher marginal price are removed.
A comparison through the two-part approximation

We can adopt a Pareto dominance approach
A comparison through the two-part approximation

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Schemes with higher fee and higher marginal price are removed
A comparison through the two-part approximation

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We can adopt a Pareto dominance approach

Schemes with higher fee and higher marginal price are removed
Conclusions

Just Amazon adopts a block rate pricing scheme. All the others adopt a bundling pricing scheme. Through a two-part tariff approximation, we can skim the non-competitive providers off in the procurement procedure. We end up with two competitors for consumers and three competitors for business customers. Prior avoidance of non-competitive pricing schemes can be accomplished.
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