Leveraging Multiple Data Sources to Measure a Firm's Risk in Organic Search

Gabriela A. Werb
Chair of Electronic Commerce
Faculty of Business and Administration
Graduate School of Finance, Economics and Management
Organic Search Results

- >70% of consumers use search engines both for discovery and consideration purposes.¹
- ~95% of the clicks following a search query.²
- ~30% to 40% of the total traffic to websites in many industries.³

Volatility in Organic Search Visibility

Source: Searchmetrics, weekly SEO visibility starting on 08/2009.
Our Study

1. VISIBILITY INDEX
   - Bayesian Hierarchical Model (CTR Estimation)

2. PREDICTIVE MODEL
   - Time Series Model

3. FUTURE SIMULATION
   - Monte Carlo Simulation

4. VISIBILITY-AT-RISK ESTIMATION
   - VaR Model

5. MEASURE THE ECONOMIC IMPACT

Comprehensive Study
- Searchmetrics SEO Visibility Index
  - 1,115 firms, 6.5 years

Case Study
- Advanced Web Ranking Organic CTR Data
  - 3,804 firms, 112,225 keywords
- Sistrix Organic Search Ranks
  - 117 keywords
- SimilarWeb Traffic Sources
  - 1,115 firms
- Google Trends Search Volume
  - 117 keywords
- Organic Search Profits
  - 1,115 firms
Main Results

- Median Visibility-at-Risk (1 year, 95% conf.): **55%**

- Risk is highly heterogeneous across industries

- Changes in the visibility index have significant and prolonged effects on profit.
Gabriela Alves Werb

gabriela.werb@wiwi.uni-frankfurt.de

Phone: +49 (0) 69 798 33 849