SEARCH-ENABLED DISRUPTIVE INNOVATION: THE CASE OF THE NORWEGIAN MEDIA-MONITORING INDUSTRY[1]

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ABSTRACT

Search technology lowers the cost of access to information, and may be a disruptive innovation for incumbent companies in industries that offer information access by categorization. The Norwegian media monitoring industry is studied as an example of this evolution: The dominant incumbent company in this industry was disrupted by agent-technology-enabled companies in the late 90s, with three new companies eventually dominating the market. As the market matures, a focus on process innovation around scalability of sales and support, rather than technological innovation, means that these companies now face competition by international automated media monitoring companies using generic and advanced search technology. This later development could constitute a low-end disruption, though it is a bit early to say yet.

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1. INTRODUCTION

Wanting to know what others say about you seems to be a basic human need, experienced no less by companies than by individuals. Modern search and publishing technology has evolved to a point where publishing something – and finding it – is extremely easy on a personal basis. Entering your own name into a search engine (egosurfing) will often lead to surprising results.

Companies need to monitor what is being said about them, and this service has traditionally been provided by media monitoring companies. This industry has gone through a technical revolution since the mid-1990s, and has evolved rapidly both in technology, customer offerings and business models. This papers seeks to document and discuss the Norwegian media monitoring market, both because this market has been an important playing ground for companies in the emerging Norwegian search technology cluster, and because the rapid evolution in business models and competitors may provide an understanding of likely evolutionary patterns in other, similar industries and markets.

The source material for this paper is primarily interviews with current and former executives in the various companies, as well as news stories and other company information. For formal interviews, notes have been fact-checked with the interview subjects.

1.1. Technology evolution and disruptive innovations

Technology evolves in a process of evolution and revolution[1], normally in a pattern with relatively long periods of evolutionary change interspersed by periods of revolutionary change. During the revolutionary periods competition is primarily based on functionality, during the evolutionary periods on performance and price[2]. While we tend, with hindsight, to remember the revolutionary innovations (the inventions), most increases in customer value and technology performance takes place in the evolutionary periods[3]. The transition from a revolutionary to an evolutionary period is often marked by the emergence of a dominant design[4] – a standard way of providing the technology, followed by a consolidation of companies and a shift from product to process innovation. The transition from an evolutionary to a revolutionary phase normally is initiated by a new technology which dramatically changes the economics or functionality of the customer offering. If the technology offers a dramatically better way of offering the same service to the same customers, it can be termed a sustaining technology or sustaining innovation, and normally is adopted by all or most of the incumbent companies in an industry. In a few cases, a technology comes along that dramatically changes the industry structure. If so, it may be a disruptive innovation.

A disruptive innovation is new way of doing things – a new technology – which replaces a prior technology despite being worse than that technology, at least in the beginning and at least in the dimensions traditionally measured. Disruptive innovations as a concept was first introduced by Christensen [5] who has observed and documented a repeated pattern of incumbent failure in the disk drive industry

[6], where architectural innovations in the form of progressively smaller disk drives were introduced by small innovating firms, where the existing market leaders chose to concentrate on their core markets rather than adopt the new, initially weaker technology.

Disruptive innovations come in two main forms: Low-end disruption, where the new technology attacks the lower end of an existing market, and non-consumption disruption, where the new technology, unable to compete in the traditional market, goes out and establishes a new market, selling the technology in its early stake to customers who prefer a bad technology to none at all. Examples of low-end disruptions are found in for instance retailing [7] and steel manufacturing [8, 9]. Examples of non-consumption disruptions are personal computers [10], transistor radios [11] and hearing aids [12].

2. THE NORWEGIAN MEDIA MONITORING INDUSTRY

The Norwegian media monitoring industry started with clipping services – a company would subscribe to the most important newspapers, employ people to read them on behalf of customers, and then report their finds according to what the customers were looking for. A typical customer would be a company wanting to know what was written about it, its competitors, suppliers or customers. The industry came into being, at least in Norway, in the late 1800s, as the number of newspapers and companies had grown large and diverse enough to require more specialized attention.

2.1. 1890 – mid1990s: The paper-based age

Over time, one company, Observer[3], came to dominate the traditional media monitoring market through a combination of organic growth and acquisitions. Observer acquired the Norwegian dominant player Norske Argus[4] in 1995. The customers were mainly medium-sized or large companies that wanted to know what was written about them and their industry in newspapers – a market generally estimated at about NOK50m[13] (about $10m) at the time. The results of the monitoring were delivered to the customers in various formats – as posted photocopies, via fax, and gradually in summary form via email. Over time, Observer expanded in scope, providing a range of services from pure monitoring of newspapers into radio and TV monitoring as well as media analysis services, generally by acquiring companies. The business model was media monitoring by summarizing news stories for their subscribers. Since the law considered manual summaries as independent work, the company (and its competitors, such as Siste Nytt) did not have to compensate the newspapers for using their articles.

This model – paper sources, manual reading, summarizing and/or physically clipping out the results – was dominant in Norway until the late 1990s, when a number of new companies sprang up, almost simultaneously. These companies used various forms of computer technology to automatically read digitally encoded text, looking for keywords of interest. Initially, the services offered by these companies was clearly inferior to what the incumbent could offer – the relatively primitive search technology could not distinguish between semantically different terms (and would then tend to flag too much information as relevant where it was not) and did not have access to material that was not available on the Internet or in other available, digital forms. The new companies would not do summarizing (which is labor intensive), but got around copyright issues by only showing a small part of the text and then allowing the customer to click through to the original article.

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[3] Renamed Cision in 2007. Some of this information is based on the web page "Cisions historie", http://no.cision.com/no/Om-Cision/Cisions-historie, accessed June 27, 2008.
[4] Argus refers to the Greek mythology creature Argus Panoptes, an all-seeing giant with 100 eyes.

A forerunner to these digitally enabled media monitoring companies was Imedia, partially owned by the Schibsted media group. This company sought to automate media monitoring using scanning technology and OCR (optical character recognition), but ended up much manual summarizing. The company's technology was eventually sold to Observer.

2.2.　　Late 1990s: Agent-based media monitoring companies

In the late 1990s, a favorable climate for technology startups and an increasing availability of information in digital form on the web enabled a number of new companies to enter the media monitoring market. In all, 10-12 companies were started. Over time, three companies (Opoint, Retriever and Intermedium) came to dominate this second generation. Another company was Cyberwatcher[5], which eventually was acquired by Intermedium. Of these, the earliest and most technically accomplished was Retriever.

Retriever was started by Erik Aaberg as Nordiske Nyheter (Nordic News) in 1999. Aaberg, who had worked with various forms of search technology and archival systems for newspapers, wanted to monitor – for himself – the new, Internet-based newspapers which had sprung up in Norway. Altavista (the dominant search engine in 1999) allowed search of web-based information, but indexing lagged two-four weeks behind publication. The general search engines also did not have the precision in terms of finding and displaying news that Aaberg wanted. News archives such as Atekst were only available to subscribers and also lagged 1-2 days. Aaberg's technology polled Internet news sites in Norway and Sweden every tenth minute, made them available immediately, and were configured for each individual news source to gain precision.

Initially, Nordiske Nyheter tried an ad-based business model, but this did not provide enough money despite good traffic numbers. A number of portal companies were fighting for share in the rapidly growing market, and were willing to pay information suppliers: Nordiske Nyheter got a very lucrative contract with SOL (Scandinavia Online), one of the largest portals. Their service was sold by SOL as media monitoring to businesses.

In 2002/3 Nordiske Nyheter merged with a very similar Swedish company called Retriever. The new company took the Retriever name, closed the Swedish technical department and moved it to Oslo, but maintained separate sales organizations. At this point, Retriever and other companies like it started to take customers from Observer. Gradually, Retriever was able to index more text from newspapers, both because a larger portion of newspaper articles were made available on the web, and through licensing, which also allowed the company to provide the

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[5] Cyberwatcher is an outlier in technology and evolution: The company started as a media monitoring company with an agent-based approach, then moved towards the software side. It is the only substantial company that run their database and search technology on a Microsoft platform (rather than the ubiquitous LAMP – Linux, Apache, MySQL, and Perl/PHP/Python – standard) and marketed itself primarily based on their excellent user interface. Intelli-search, a Norwegian search technology company, was a spinoff from Cyberwatcher.

full text of the articles. The company spends much time and effort configuring their search engine to fit each news source, to increase precision.

In 2004 Retriever was acquired by the Schibsted media group, touching off a process of consolidation in the Internet-based media monitoring market. At this point, a total of 12-15 actors, primarily small start-ups in the Norwegian market, where competing very hard for a relatively small set of customers. The tough competition drove technical innovation and many of the companies had solutions that were very good, also when compared to the international market. The newspapers saw the media monitoring market as a new publishing channel, and took large ownership positions in the dominant Internet-based companies: Opoint was acquired by the Edda media group and Intermedium by A-pressen/Orkla.

The Schibsted media house had a long-term and very conscious strategy of migrating from paper-based to electronic news and services, and also allowed internal competition between its business units [14]. The acquisition opened new new business opportunities for Retriever: The company gained access to Mediearkivet, a text database of more than 50 newspaper archives, some of them going back to 1983. Retriever was now able to compete directly with Observer: Though Observer's manual processes had higher precision, Retriever could provide media monitoring at only 10% of Observer's price. Retriever could now sell media monitoring to the customers of Mediearkivet, and archival services to its media monitoring customers. The financial infusion from Schibsted also allowed a strengthening of the sales force and a new technical platform based on the FAST search engine[6]. Retriever had wanted this high-end solution for a while, but could not afford it. The FAST engine took 1.5 years to install and configure, but consolidated five different technical solutions and gave Retriever a very advanced platform spanning both current and archival material.

Since the competition in pure text was becoming very tough, Retriever expanded into radio and TV monitoring in 2005/2006, securing an agreement with the two main TV companies (NRK and TV2) to gain access to key-words[7] entered by the TV companies for news stories. This allowed an offering where companies could search inside news programs based on the keywords – an imperfect solution, since the keywords sometimes could be of low quality – but it allowed Retriever to compete with Observer in this relatively lucrative market as well.

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[6] Schibsted also pursued a strategy of starting a fully fledged search site, Sesam.no, at this time, an effort that was scaled back in 2007 after significant investments.

[7] A persistent difficulty in monitoring TV and radio channels is the lack of metadata – data about the underlying content that lends itself to automated categorization and search approaches. Current technology generate metadata from many sources: Any kind of text about the program (such as program listings and web text written by the broadcasters for their web sites), text appearing in the picture (translations, names and titles of interview subjects), speech-to-text recognition (an imperfect technology highly dependent on clear diction, domain constraints and lack of background noise). The technology is evolving and much research and development is undertaken by search and media companies to break through the "metadata barrier").

2.3.   Incumbent reaction

Observer had seen the new, Internet-based competition start to appear in the late 1990s, first in Norway, then in Sweden, Denmark and Finland. Observer had had a stable customer based for many years and had a comparatively small sales force, whereas the new Internet-based competitors would be small, perhaps with 3-4 technicians and 3-4 salespeople, a comparatively much heavier emphasis on marketing. The new competitors offered a product of inferior quality (both in terms of search precision and range of sources,) but at a much lower price. Gradually the new companies started to eat into Observer's markets, initially taking away smaller, price-sensitive customers for whom media monitoring was not a very high priority. The smaller companies did not consciously target Observer's customers – they would sell their technology to anyone interested, and given the dominance of Observer in the media monitoring market, some loss of market share seemed inevitable.

Observer understood that it had to offer an automated service, and in 2000/2001 a number of meetings where held between Observer and Retriever. Retriever wanted to sell their technology (or the whole company) to Observer, but after a string of meetings Observer decided that they wanted to develop their own technology. The company eventually did, but it took a long time and allowed the Internet-based companies to consolidate their position and continue to innovate technically. When Observer eventually had a search engine, commercially available search engine licenses could be had relatively cheaply, many small startups had appeared, and the company gained relatively little differentiation from having developed its own technology, despite its qualities.

Top management in Observer continued to hold the view that their services were better, and that the Internet-based companies eventually would flop. Taking a lower quality, inexpensive agent-based approach would mean laying people off and reducing the profit margin. Not even in January 2003, when Intermedium (at that point with only 10 important newspapers in their source material) got the contract to do media monitoring for Statoil, Norway's second largest company, did Observer change their view. Said one Intermedium executive: "We were shaking our heads and wondering when Observer would get it, but they seemed to be in denial." When asked about losing their biggest customer in a business newspaper, the CEO of Observer Norway argued that Intermedium only had 10 sources (albeit the most important ones) compared to Observer's 1,000, and that their customers appreciated the added value of having a summary, rather than the whole article[15]. He stated:

> We are a shield against the flood of information. The customers do not want full text articles because the information stream becomes too large. Observer can never be replaced by an electronic system.

As the market for simpler services gradually was taken over by the Internet-based companies, Observer moved into news analysis – a more consulting-like service for each company, not only summarizing individual articles but also providing research on various other aspects of media monitoring, such as tracking the number of articles written about one company, sentiments (to what extent they

were positive or negative), as well press release and placement services (helping companies communicate with the press) as well as other, more tailored services.

2.4.   Further consolidation, international generic competition

In 2007 this, Intermedium acquired Cyberwatcher, and Opoint acquired Siste Nytt (which also was a supplier to Intermedium). At this point, there was little difference between the three main Internet-based media monitoring companies: While the number of sources previously had been a major differentiator, all three now, through cross-licensing with media-houses and news organizations had more or less the same basis for their source material. Retriever, which did not have a summarizing service, had experimented with creating software that would summarize newspapers automatically, but as this service was not considered to be work independently produced from the newspaper articles, the company would still have to pay license fees to the newspapers.

From 2003, new actors came into the market, in two forms: Pure Internet-based media monitoring companies, which scraped news off the web without trying to get material from newspapers[8]. The dominant company here was Meltwater (named Magenta News until 2007), a company started by the Norwegian entrepreneur Jørn Lyseggen. Meltwater was different from the three agent-based companies, in that it used a widely available open source search engine, Lucene[9], and that the organization was designed with a focus on sales and customer service rather than technology development. Meltwater's offering was seen by its competitors as inferior in technical quality to those of Retriever, Intermedium and Opoint, but were initially offered at substantially lower prices and quickly gained many customers. This was partially achieved through scale (Meltwater was in many markets in addition to the Nordics), partly through a very aggressive sales model, where Meltwater would partner with a telephone sales company in each country rather than having their own sales force, and quickly move to another telesales company if the first one did not provide the expected growth. Meltwater spent most of their money on their sales force, had a model of "generational" growth (they hired sales people with leadership potential and offered them the opportunity to start a new regional sales office after 1-3 years of sales work.) The sales force worked extensively with each client to help them configure their monitoring profiles.

A significant development was the emergence of free news monitoring services, such as Google's news service (see figure 2) as well as RSS feed readers, which enabled individuals to quickly set up monitoring of many news feeds. As

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[8]The proportion of a newspaper that also is available on the web varies a lot, from as low as 10% to 100%. In most instances a lower proportion indicates that most of the paper material never reaches the Internet, but in some instances (such as the Norwegian tabloid VG and its electronic counterpart vgnett.no) the web version is a separate operation from the paper version with its own editors and journalists. Also, some newspapers are available on the web only. Furthermore, a substantial number of articles are generated by news agencies such as Reuters or NTB, and appear in many newspapers as the same article.
[9] Meltwater tried using the FAST search engine for a while, but dropped it because of high license costs.

newspapers started to offer continuous updates via RSS, the screen presentation of each news site started to matter less. Google was financed by (primarily text-based) advertising[10].

The agent-based companies (Retriever, Intermedium and Opoint) responded by further extending their platforms – more radio and TV monitoring services, better customers interfaces, better display functionality (for instance enabling customers not only to see the text of a news story or web page, but also a thumbnail image of what it looked like.) There was, however, a strong pressure downwards on prices, and very little customer loyalty – many companies would switch between providers on a fairly regular basis.

Observer, now named Cision, is almost out of the media monitoring business, and now makes most of its money on news analysis and other services. Pockets of customers still exist that want specialized material that is not available on the web, such as certain specialized magazines.

According to one industry executive, the market is now divided into three broad categories:

- free tools, financed with ads or other forms of indirect payment

- a software approach, with agent-based technologies. These companies have low fixed costs and the market tends towards a "winner takes all" situation.

- a higher end, with consultative approach, where the media monitoring company provides refining and interpretation

With available generic search software, as well as specialized spider[11] companies that sell content directly to news monitoring companies, the barriers to entry are now very low. Scale seems to become increasingly important, and the newer the competitor, the more sales per employee does the company have[12]. The traditional companies spend much time understanding what the customers want and innovating towards that, but imitation by new and existing software-based competitors happens faster and faster.

2.5.   Discussion – disruption of the media monitoring business

As seen from what has been presented so far, there have been two major changes in the Norwegian media monitoring industry:

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[10] Google has two main forms of advertising: Adwords, which is made available on their own pages, and Adsense, which is made available on sites where Google have partnership agreements. Advertisers bid to own exposure based on keywords. The ads displayed are selected based on user input (search terms) and text displayed on the screen. The whole process is automatic on the publishing side and highly dynamic on the purchasing side – advertisers can place ads in many contexts and quickly change them.
[11] A spider, in this setting, is a piece of software that monitors changing web pages.
[12] See figure 1. The numbers are incomplete and plagued by many external sources of variation, so this conclusion is based more on discussions with industry executives that the posted accounting numbers themselves.

- The emergence of a set of competitors to the paper-based approach in the end of the 1990s, where the dominant company (Observer) met new competition from small Internet (or, rather, search-based) startups such as Retriever, Intermedium and Opoint.

- The emergence of several companies, either specialized in the industry (such as Meltwater) or generic search companies (such as Google) which compete with the specialized, technology-enabled media monitoring companies (now owned by media houses)

The first of these changes seems to be a pure non-consumption disruption, where the new companies, unable to compete in the newspaper monitoring market, establish themselves in a new market (web monitoring), develop their technology there, and then grow into the regular newspaper monitoring market.

The second change is more difficult – it may be a low-end disruption (where the new companies provide the same services at a lower price point) or simply the emergence of a dominant design – the global, search-enabled media-monitoring company.

As seen in figure 3, the media monitoring market can be portrayed as having several different sub-markets, each with higher quality demands (and higher willingness to pay). These four sub-markets are monitoring of web-based material, which is available for everyone; monitoring of newspaper- and other print media material, which requires access to the news sources and, depending on business model (whether the company is offering summaries, excerpts or full access), agreements around copyright; monitoring of audiovisual material such as radio and TV, which requires access to the raw media stream, the metadata necessary to do meaningful monitoring, and, if that is not available, an organization or technology capable of searching directly in the audio or video feed. The top market is less well defined, but involves more consulting-like, tailored services and possibly monitoring of other information sources, such as the stock market, industry conferences, and research articles. The lines for each market slant slightly upward, indicating that what is considered industry practice evolves every year, as customers' ability to use media monitoring services increases.

Retriever, Intermedium and Opoint started out monitoring news from freely available web news sources. These were of inferior quality, both in content and completeness, than the paper sources the paper-based incumbents relied on. Observer was aware of the new competition, but their business model (fee for summaries, not easily automatable) and prior investments (a typical media monitoring setup required about 1500 news sources, 30-40 people reading them, and 300-400 customers necessary to finance this operation. The new companies were typically offering their services at 10% of Observer's price. The agent-based companies gradually moved more and more into newspaper material, especially after the media houses saw them as an interesting business and acquired them, thereby giving them access to hitherto proprietary material. This is a classic disruption in that the disrupting companies moved into markets that meant little to the incumbent, with inferior service quality and at a price point the incumbent could not match. Moreover, in the early phase none of the important customers were

interested in the new services, at least not for the first years. By the time that changed, it was too late for Observer to try to out-compete them: They had to create their own technology, which took time and ate further into their established, manual approach.

The agent-based companies, again, faced new competition from Meltwater and to a certain extent free services, which compete on scale, relatively simple search algorithms (but a very strong focus on customer satisfaction) and do not intend to move much beyond web-based material. This can be seen as a disruption inasmuch as it is based on relatively cheaply available technology, scalability, the increasing availability of newspaper content in searchable form on the web[13], and (at least for the ad-based service offered by Google) a sharp reduction in information availability latency: Google now typically indexes news from the most important channels immediately.

The first disruption was partially a non-consumption disruption (with the agent-based companies going after smaller clients who previously could not afford media monitoring), eventually a low-end disruption. The second disruption, at least as initiated by Meltwater, could be seen as a more of a pure low-end disruption (lower prices initially offered) but on further reflection is, if not a dominant design, at least a sign of the transition of automated media monitoring as having moved from a revolutionary to an evolutionary phase, where the focus now is on scalability of the service and productivity of the sales and support services.

In both transitions, the response of the incumbents has been in refining their own approach and moving into markets with more profitability rather than adopting the disruptor's approach. Observer was gradually outcompeted from the newspaper segment and now derives little revenue from it. It responded by maintaining its radio and TV monitoring and moving into more complex services. Some of the agent-based companies have also done this – Retriever is providing automated news analysis services and is moving into radio and TV, as is Opoint, whereas Intermedium has moved into news analysis and services reminiscent of Observer's press release and placement offerings. Meltwater remains focused on text-based automated media monitoring, primarily of web sources.

2.6.   The future of the Norwegian news monitoring industry

Judging from the accounting figures (see figure 1[14]), the news monitoring industry has been blessed with patient investors – the competition is hard for a rather

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[13] New York Times is a typical example here: The company experimented with putting most of its material behind a subscription wall in 2004, and found that since their material was available only to paying customers, traffic and – more importantly – incoming links to their site decreased. In 2008, they opened up all their material again, after having calculated that the value of ads (and the centrality offered by having available material) was larger than the value of on-line subscriptions.

[14] The numbers are incomplete and plagued by many external sources of variation, so this conclusion is based more on discussions with industry executives that the posted accounting numbers themselves. The numbers for Meltwater, in particular, are difficult to consolidate

small market, and none of the companies are making large profits on a consistent basis. Some of them have consistently lost money, in Observer's case quite substantially, though the company makes it up in other geographies. The agent-based companies are making money, but hardly enough to justify the investments. The fact that they are owned by media houses which may see them as an essential component in a broader media strategy may secure their existence, but the fact remains that the entry of cheaper, even free services based on generic search technology and an ever growing availability of free web material works against them.

One way out may be international expansion: The Norwegian media monitoring market is technically rather advanced and may have played a role in establishing the search technology industry in Norway[15]. Yet, only Meltwater has shown aggressiveness in expanding abroad, though most of the companies have plans for international expansion. Meltwater is by now the largest or one of the largest media monitoring companies in the world, and regards Norway as a small, but important market. Meltwater's model is scalable to a much larger degree than that of the other companies. Long-term, both from the data and from theory, one would expect an industry consolidation, with the three agent-based companies surviving more because they are tide to individual media houses than because of their external customer base.

A persistent problem for the industry is changes in what customers demand from their media monitoring services: As a new generation of customers arrives, used to having information literally at their fingertips and plugged into their own social software and newsfeeds, the companies struggle to find added value to provide. Radio and TV monitoring remains a hard nut to crack – when it happens, the technology transfer is likely to be fast and probably driven by advances in delivery technologies as much as increases in ability to generate searchable metadata.

The rapid technology evolution has ensured, as in any market where there are many players, that the main beneficiaries have been the technology companies, which have gained a very competitive marketplace to sell their technology. The situation is akin to a war zone, where the only ones making profit are the weapons dealers, who benefit both from the intensity of the conflict and the number of warring parties.

3.   REFERENCES

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due to the very distributed nature of the company and the fact that it is headquartered in the United States after having been started in Norway.

[15] Several important search technology companies have significant development operations in Norway, such as FAST Search and Transfer (acquired by Microsoft in 2008), Google, and Yahoo. In addition, a number of smaller search technology development and implementation companies exists.
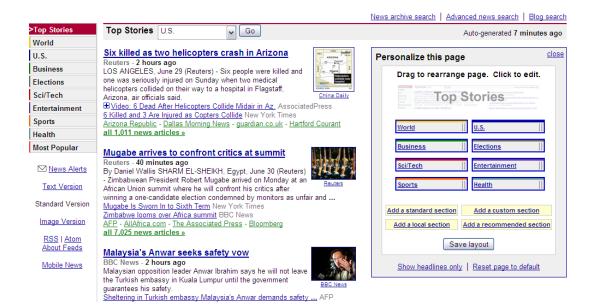
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Figure 1: Accounting overview, selected companies, Norwegian Media Monitoring industry

(Source: Proff/Forvalt, various trade magazines).

Company/Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Revenues									
Observer/Cision		68582	87658	102324	84255	71502	66608	68654	64426
Siste Nytt	0	1571	4424	7684	8187	7964	7507	7333	7671
Cyberwatcher		30	0	2191	3812	9074	11906	29428	7041
Retriever	1056	1133	676	2943	7686	12372	12821	24337	30927
Intermedium	415	1046	2407	4230	5613	7789	6921	13179	15450
Opoint	1056	1133	2297	1220	3975	5019	5917	7083	8417
Meltwater/Magenta					1147	6735	23695	32213	52764
Gross margin									
Observer/Cision		1167	-14445	-3367	-4183	-19315	-16194	-9488	-12308
Siste Nytt	-1416	-3171	-2605	261	650	559	490	197	610
Cyberwatcher		-1282	-18476	-9579	-2475	819	1466	16562	437
Retriever			-1687	-3256	-1353	954	6	2320	3188
Intermedium	23	-562	-417	-4228	-4332	-1644	-1882	-5184	-10853
Opoint	154	-70	-5546	-14099	-7941	-2057	327	360	482
Meltwater/Magenta					-90	802	1407	-8277	390
Employees									
Observer/Cision	81		174	148	130	100	100	101	80
Siste Nytt	4		13	10	10	10	10	14	10
Cyberwatcher			10	15	6	11	11	12	9
Retriever			3	5	9	13	16	22	22
Intermedium	2		10	13	13	13	13	19	15
Opoint	4		10	0	15	7	10	0	12
Meltwater/Magenta					1	2	5		
Revenue/employee									
Observer/Cision			504	691	648	715	666	680	805
Siste Nytt			340	768	819	796	751	524	767
Cyberwatcher			-	146	635	825	1 082	2 452	782
Retriever			225	589	854	952	801	1 106	1 406
Intermedium	208		241	325	432	599	532	694	1 030
Opoint	264		230		265	717	592		701
Meltwater/Magenta					1 147	3 368	4 739		

Figure 2: Google news personalization page

(Source: news.google.com)

Figure 3: Disruption of the Norwegian media monitoring market

Disruptions in the Norwegian media monitoring industry

Observer
Retriever, Intermedium, Opoint
Meltwater

Monitoring quality

Stockmarket monitoring/complex services

Radio and TV monitoring

Newspaper-based material

Internet-based material

1990   1995   2000   2005