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The Role of Innovation Journalism in Science News Media

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During the past decade there has been an important worldwide trend in which more research is conducted in private companies or research departments with high ambitions of spin-offs. The science journalism tradition of mainly giving perspectives on recently published peer reviewed articles is no longer sufficient. Innovation journalism increases the possibilities of covering key factors driving scientific development. This paper describes how a few different science media have chosen to approach the challenge of integrating innovation journalism. It discusses the challenges for the modern science journalists, their work environments and editorial organizations.

1 Introduction

The research landscape is constantly changing. During the past decade there has been an important worldwide trend in which more research is conducted in private companies or research departments with high ambitions of spin-offs.

One example is the search for future medications, which is mainly taking place in private biotech companies. Commercial actors are also dominating the development of future technologies that use manipulation on a nano scale.

This of course changes the road map for science media covering these areas. It also changes the daily work of the science journalist. The old tradition of mainly giving perspectives on recently published peer reviewed articles is not sufficient any more.

By introducing more innovation journalism, the chances are higher that key factors of the scientific development are actually analyzed. It also better serves the reader who is usually a well educated professional in the fields of science, medicine, technology or business related to these areas.

Methods to achieve this are still under investigation by some science media, while others have already taken the step to fully use the ideas of innovation journalism. This paper describes a few different science media and how they have chosen to approach the challenge of integrating innovation journalism. How can innovation journalism lead to a publishing success?

The paper also gives an insight to the challenges that a modern science journalist will meet. There are new potential angles to stories and new subjects to take into consideration. Finally, the report gives some perspectives on the importance of the editorial organization and the work environment that will help or not help the innovation journalist in his or her work.

1.1 Some Definitions

As part of the above mentioned fellowship was a quest to evaluate the concept of "Innovation Journalism" [1], coined by David Nordfors in 2003, and described as journalism covering technical, business, legal and political aspects of innovation and innovation systems.

2 The Challenge of Innovation Journalism – Some Examples

2.1 Science Magazine

Since 1880 the weekly publication *Science* has provided the community of researchers, mainly in the US, with news and views concerning the academic world. The aim is to serve as a forum for the presentation and discussion of important issues related to the advancement of science. This includes keeping the readers updated on the latest trends in important research fields and reporting on governmental decisions and changes in funding that could have an impact on the daily work of researchers in the field of natural sciences.

Through correspondents and freelancers, *Science* also gives a perspective on activities in Europe and Asia. Today the non-US coverage is approximately 30-40 percent. The magazine is circulated weekly in 130 000 copies It also has a web portal that is licensed to many institutions. Altogether the printed magazine and the web have approximately 1 million readers.

In *Science* you often find articles inspired by recently published scientific results. You would never find an article simply about a surprisingly high investment or funding of a lab. Instead, it would be more likely to publish articles describing consequences of large cuts in funding for labs. The focus has always been, and still is, basic research. But lately the magazine has begun to reconsider its areas of coverage.

The number of subscribers is diminishing and advertisement is still unreliable. Due to the overall recession in the end of the nineties there was a severe dip in advertisement. The trend is now slowly pointing upwards again. Increasingly, advertisements are coming from companies involved in biological research.

[1] "The Concept of Innovation Journalism and a Programme for Developing it" by D. Nordfors, VINNOVA Information VI 2003:5, ISSN 1650-3120, Nov. 2003. The paper has been re-published by Innovation Journalism, Vol. 1 No. 1, May 2004.
www.innovationjournalism.org/archive/INJO-1-1.pdf

When the landscape of research activities is changing, so must the media covering this landscape. To meet the needs, *Science* has shown an increasing interest in innovation journalism. The main focus is on biotech companies, where basic research is forced to meet the needs of a market oriented organization. The angle of some of those stories has been on the course of action in the development of, for example, a new drug.

The focus on policy issues, patents and protection of intellectual property rights has always existed, mainly concerning activities in and around research labs.. Through inspiration supplied by the Swedish innovation journalism fellowship program, the spotlight has also been pointed at other areas, such as commercialization of nanotechnology, emission control technologies and data storage. Information about the market value, costs and benefits are added to the traditional story about scientific advancements. During the summer of 2005 *Science* will publish a special issue on Industrial Research. The focus will be on the development of new drugs – medical trends and how some drug innovators started their success stories.

2.2 Nature

Nature is the closest competitor of *Science* and has a similar area of coverage and readers in the same community. But the reporting style and the choice of subjects are different. The *Nature* news department during the past four years has focused heavily on issues concerning the labs as a workplace and how this work could be of common interest. Being ahead of other news media is also a high priority at *Nature*

Short stories about new funding to specific labs and important investments may appear from time to time. To a pair of European eyes the *Nature* material also seems less specific to the US than the *Science* material. This could be due to fact that *Nature's* editorial board is based in London. As from March 2005 also the news and views are edited from London.

For some readers *Nature´*s way of presenting news and views could appear a bit less analytical than the coverage in *Science*. At the same time *Nature´*s reporting seems more "newsy," meaning more flexible and sensible toward what is of concern for a broader audience.

Perhaps as a consequence of this, *Nature* has decided to launch a new Business section. "There has always been a gap between the science reporting and the business reporting and we want to fill that gap," says news editor Colin MacIlwain, the new *Nature* Business editor.

2.3 The Swedish Science Radio

For about twenty years the Swedish national public radio has had a special science department. During the past seven years the department has produced daily science news. The nature of the material has varied slightly with the different persons in charge. But the basis has been and is to provide a common audience with exciting news from the world of science.

For a few years technology and innovation enjoyed special attention from the science radio. Reporters where contracted on a yearly basis to cover these areas. But it is uncertain whether these news could actually go under the label "innovation journalism," since there was rarely any time for talking about the commercial aspects of the technology development. The priority in the science news radio has always been the discovery itself. True innovation journalism stories are more likely to be found in the longer feature programs or in the economy news.

Today the emphasis on frontline technology in the science news radio has diminished. The focus is more frequently on biotechnology and the efficiency of new drugs. Attention has also shifted towards more political aspects of science issues and EU-related research actions.

The overall picture is that the Swedish science radio is moving away from business aspects and innovation journalism. Recently the program covering IT, both from the innovation and from the consumer perspectives, was transformed into a new technology program. The new program called "Tekno" places greater emphasis on consumer technologies and is presented with a strong "how does it work" approach. This is considered more relevant to a broad audience.

2.4 Process Nordic

In November 2004 the tabloid publication *Process Nordic* was launched in Sweden, Norway, Denmark and Finland. The magazine, which is distributed to 28 000 readers in the Nordic countries, presents news and feature from a broad range of industrial sectors. Pharmaceuticals, pulp and paper, steel, energy and chemical production are among the areas of coverage.

The aim of the magazine is to cover topics that could be of interest for many different industrial sectors. The idea is to help the readers - who are working in or in close relation with the process industry - to get inspiration from each other. In that way the readers, who are of course already interested in innovation, can find new ideas of how to work and solve problems.

The percentage of innovation journalism in *Process Nordic* is high. Most articles are taking into account both technological and commercial aspects. Large investments are considered news worthy. The magazine also has a special section that covers industrially related research. The focus here is slightly more on functionality than on the commercial aspects of the discovery, mostly due to lack of space. But by answering the question "Why is it an important discovery?" the innovation aspect is at least partly covered, even if the discovery itself came out of basic research.

So far there has been comparatively less coverage of patent and intellectual property issues, mainly because it is hard to make companies talk about their activities in these areas. Spin-off activities from universities in areas concerning the heavy industry are also still quite rare in Sweden. Yet, I dare say that *Process*

Nordic is one of the publications in Sweden today that comes closest to true innovation journalism.

3 Why Innovation Journalism in Science Media?

3.1 Science and Nature

With a steady decline in membership, *Science* magazine wants to do something to attract new readers. Traditionally *Science* magazine is distributed to the members of the organization AAAS and the membership fees are an important income for the magazine. Since 80 percent of the members/readers today are active in the life sciences (biology, medicine, ecology, biotech etc), it is important to cover what is going on in these areas.

An increasing part of this research is conducted in companies. Innovation journalism will therefore be necessary to meet the needs and interests of readers active in the fields of biotechnology, pharmaceuticals, medicine, nanotechnology, computers and assisting technologies.

Even if the scientific discovery itself will always be the main focus of a science magazine, adding some business aspects could enhance the quality of the stories. By adding more market-oriented information to stories about research trends, the story broadens the perspective on the research. It becomes attractive not only to researchers interested in a specific field, but also to readers working with activities related to the research area. Innovation journalism could open doors to readers seeking inspiration from areas different from their own.

The situation for *Nature* is similar to that of *Science*, but the approach to attract new readers is different. By introducing a separate business section *Nature* sends a clear message to its readers: *Nature* is the magazine to choose if you are interested in something more than intellectual dispute, governmental policies and basic research results.

The business section could also offer an opportunity to look deeper into the factors driving the research performed in companies. This research is becoming more and more important since the governmental research funding is steadily diminishing.

3.2 Process Nordic

The publication was started mainly to meet the needs of people working in the heavy industry. No other specialized magazine is covering such a broad range of heavy industrial areas in Sweden today. This is central for the business idea of the publication.

Since the readers are so widely spread in different areas, we believe that the magazine can play a role in the knowledge transfer in the heavy industry. To achieve that, we try to cover as many aspects as possible in the everyday life of the processing industry. This includes the development of new processes, the effects of environmental regulations on companies and stories about the process of putting new products on the market.

Even if every single article could not be described as innovation journalism, the magazine gives an overall picture of how research, technology, politics and economy interact in the industry.

4 Methods of Innovation Journalism

There is no single method of practicing innovation journalism in the science media today. The methods vary like many other aspects of the publication. But there are some key methods that should be pursued.

4.1 Science Media

Scientific trends are always interesting to readers interested in science and technology. By adding information about market value, cost and benefit the development of a scientific field could appeal also to a reader that does not have a detailed interest in the research itself.

It may also be valuable to take a closer look at the environment surrounding the research, such as politics with an impact on research policy and funding, governmental regulations and the work environment for researchers.

A scientific magazine seeking to expand its offering of innovation journalism could find it helpful to look at some well established innovation journalism publications, such as *MIT Technology Review* and *Business Week*.

Even if the science news media always will favor basic research over technology or business, there are journalistic methods that could be applied in a very similar way. Feature stories and trend analysis, for example, could easily be written about more innovation-related questions. News stories about investment-related issues or difficulties connected with start-up processes should be encouraged. This is something that is already partly a reality in *Nature*'s coverage.

By choosing to bridge the gap between science and business reporting in a separate section, *Nature* also shows that it cares about the reader who is active in a commercial research world. At the same time it may appeal to new advertisers, which is important for every commercial magazine.

My experience is that a supplement is usually a good way of promoting a new media focus. After a few years, the area of coverage may be mature enough to be integrated in the magazine. But sometimes a labeled two-page section may be clear

enough to point out a new area of coverage. The future will tell if the *Nature* business section was the right way to go.

4.2 An Existing Method

In 1999 the largest Swedish weekly technology paper *Ny Teknik* started a new section called "Teknik i tillväxt" (Technology in growth). Every week in the special two-page section a new company developing an emerging technology is visited. The technology is described and a background is given to the commercial situation the company is facing.

In order to choose relevant companies *Ny Teknik* developed a method in which key criteria are analyzed. For example, such key criteria may include the maturity of the technique, the extent to which the technique is based on patents, and the financial situation in terms of accessible venture capital etc. The original idea was imported from the Finnish sister publication *TEKNIIKKA & TALOUS*.

Today "Teknik i tillväxt" still looks pretty much the same as it did six years ago, while the rest of the publication has undergone a drastic change. *Ny Teknik* has developed into a more news and business oriented paper, in which the feature story about frontline research has almost completely disappeared. A large portion of the articles integrates both technical and commercial aspects into the story. Increasingly, IT is getting deeper coverage.Process Nordic - a New Magazine

Process Nordic is a new publication free from old publishing conventions. The magazine is still developing its shape. The first study of the readership has shown that the interest is high. 73 percent of the recipients have read the publication. The publication is mainly financed by ads, not so much by subscribers. It receives a special interest among consultants, production managers and professionals within research and product development.

The magazine has managed to fill a gap, covering issues that concern many people in their daily challenges.

Many Scandinavians are working with some kind of technology enhancement. Of course they are seeking inspiration and more knowledge that could guide them to better performances in their work. Since industrial development almost always includes science, technology and business, innovation journalism becomes a necessary tool.

5 Organizing Innovation Journalism

Journalism has many similarities with other activities performed at a high speed with a large amount of choices to be made in a short time. A former colleague of mine has described the media organization as a military organization where everybody knows in each moment what he or she needs to do. This makes it possible to quickly handle unexpected events such as the 9/11 attack or the tsunami

that devastated parts of Asia in December of 2004. A clearly defined organization makes it easier for new soldiers to get quickly into their jobs, since the organization itself is instructive.

It must be easy for the soldier to navigate and find answers to his or her questions fast. It is also important that each decision is based on a strong foundation of standardized knowledge. This will lead to the same decision in every similar situation, which is necessary for the safety of the personnel and the quality of the action.

In journalism good organization is necessary in order to get consistent results. This can have an impact on how well the publication attracts readers. A clear direction and support for the reporters also leads to higher quality stories.

The transfer of informal information is another important factor in a fast working media organization. Organizational studies have shown that open environments save a lot of time and work, since everybody can communicate with each other in an informal way. Separate rooms could offer a less stressful work environment, but they can also have an isolating effect on reporters.

A common way of solving isolation is to have formal regular meetings with everybody in the department. Naturally the follow-ups on these meetings have to be handled in a fair way by responsible editors, not forgetting who was involved or interested. Having few editors within a short distance of each other and the working reporters is an efficient way of getting fast results.

An important factor to Sweden's success in many innovation areas is the habit of creating flat organizations. This has now been praxis for several decades and is getting more and more common also in academic organizations (labs etc).

6 The Innovation Reporter

The work situation for the innovation reporter is usually a bit lonely. Innovation journalism is a new concept for many media. Reporters covering innovation are in the peripheries of the established beats. He or she is not really a science reporter, or a business reporter, or a common reporter. This puts pressure on the media organization wanting to integrate innovation journalism in their coverage.

Probably the best way of integrating the innovation reporter in common media would be to let him or her work with the business editor, but with a special assignment to stay in close relation with the science editor.

For specialized science media like *Science* and *Nature*, the best way to integrate more innovation journalism is probably by establishing a business and innovation editor. An open-minded attitude to new ideas is also necessary, as in all creative work.

For the reporter it is important to stay updated with the latest discoveries in science, technology and business. In order to keep up with all this it is recommended that the reporter read both science magazines and business magazines. Other recommended sources might include *EurekAlert!* and e4engineering.com. As in all journalism it is important to search for personal sources. Keeping an eye on relevant conferences is usually a good idea. Conference programs are goldmines for the reporter searching for new names and interesting companies.

7 Future Challenges

There are still many challenges for science media in the area of innovation journalism. Traditionally business matters have not been of interest for science reporters, who prefer to focus on science itself. It is the right of every reporter to shape his or her story in the direction he or she thinks is the most relevant for the reader, but when the world turns steadily towards a more commercial environment, the business reality becomes more relevant. Science reporter might owe to his or her readers to present more of the reality surrounding the research.

To the common audience many science media are still considered to be entertainment. It is possible that innovation journalism could offer a new way for science journalism to become something more than either entertainment or a narrow niche for a specialized community.

For a specialized science media a future challenge would be to cover even more of the research process taking place in areas of the private sector, such as drug companies and stem cell start-ups. What substances are being patented and what relevance do the patents have? Is the research serious enough to be able to lead to new effective drugs, or is the company just looking for a business opportunity? Are all the relevant studies reported to the authorities or only the ones that are of positive business interest for the company?

As commercial motives influence research, science media that examines the actions of authorities should also examine the actions of commercial actors with power over research. Such stories will be important for science news in the coming years. One example is the scarce presentation of drug tests in companies. Today most companies are only presenting results when they have succeeded. In the future they might have to present all tests and also assign them in advance to the medical publications. But the companies are resisting this, since it might slow down the marketing process.

Anna Nilsson at the Swedish Institute for Growth Policy Studies, ITPS, has studied the development of stem cell research in the US, conflicts of interest in this area, and the solutions to these. She suggests that journalists analyzing biotech companies should also look into how the human capital is transferred. Only studying the business aspects of a biotech company does not give the whole picture of its success or failure. It can be beneficial for business media to engage a science

reporter with business interest. The suggestion opens a whole new field for journalists wanting to dig into the reality of an industry that might have a drastic impact on our lives in the future.

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