

The Role of Journalism in Creating the Metaphor of Silicon Valley

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The Role of Journalism in Creating The Metaphor of Silicon Valley

This paper looks at the role of journalism in creating the metaphor of Silicon Valley. The case demonstrates the importance of journalism for introducing new concepts and metaphors representing innovation processes and ecosystems into societies. We suggest that journalism is essential in innovation economies, since a) an innovation is the introduction of something new b) it is difficult to discuss new things if there is no common language for them and c) journalism is a key actor for introducing common language for innovations, so that they may be discussed. Our key example is the metaphor of Silicon Valley, first introduced by the journalist Don Hoefler of the trade publication *The Electronic News*, picked up by other news media and spread all over the world. It initially was a nickname of a specific industrial area, but transformed into the name of the vision of the perfect innovation ecosystem, making it possible for people to discuss innovation ecosystems. First, the paper shortly presents the previous research on the meanings of metaphors and neologisms in the mass media. Then it continues into evolution of the concept of Silicon Valley in the media. Finally, the paper compares the first Silicon Valley stories between the leading American dailies *The New York Times*, the *Los Angeles Times*, the *Washington Post* and the *Wall Street Journal*. The main result is that *The New York Times* was vital for spreading the metaphor of Silicon Valley into a wider audience, which happened almost exactly four years after being published first by *The Electronic News*, in 1971. It was still used with quotation marks in one *NY Times* story in 1982. We conclude it took over a decade for this now famous metaphor to become a part of the language.

Introduction

In this paper we will, for the first time, explore the role of journalism in introducing metaphor “Silicon Valley” to the public.

We spotlight the importance of journalism as an intermediary actor in innovation, diffusing new concepts and metaphors into societies. This paper gives an example of how journalism has influenced the formation of language describing innovation, in turn influencing the global discussion about innovation ecosystems.

The paper provides a case study supporting the idea that innovation journalism, i.e. journalism covering innovation processes and ecosystems, can be important for the creation of a shared language for the processes and contexts of innovation. This may enable communities to discuss how they innovate, and may influence the evolution of innovation processes and ecosystems. (Nordfors, Uskali 2007)¹.

¹ David Nordfors and Turo Uskali, “New Concept: Innovation Requires New Words, Requires Journalism”, The Innovation Journalism Blog, March 09 2007.
<http://www.innovationjournalism.org/blog/2007/03/new-concept-innovation-journalism-and.html>

Journalism Introducing Language for Innovation

"Neologism", according to the dictionary (Wikipedia May 2007), is

"a word, term, or phrase which has been recently created ("coined") — often to apply to new concepts, to synthesize pre-existing concepts, or to make older terminology sound more contemporary. Neologisms are especially useful in identifying inventions, new phenomena, or old ideas which have taken on a new cultural context. The term e-mail, as used today, is an example of a neologism." "Neologisms often become popular by way of mass media, the Internet, or word of mouth." "Every word in a language was, at some time, a neologism, though most of these ceased to be such through time and acceptance."

We have suggested that neologisms are central for innovation, and that journalism is central for introducing them, using the following intuitive argument:

1. Innovation is the introduction of something new
2. In order to introduce something, it needs to be communicated
3. Communication requires shared language
4. New things need new words or word combinations to be a part of the language
5. The news makes/spreads the new words to us so that the new things can be included in our language, discussed and introduced.
6. Therefore: Journalism enables society to discuss new things and introduce innovations.

This applies for all journalism covering innovations.

Injo - journalism about innovation processes and ecosystems - is a special case. It introduces language for how innovation happens. So innovation journalism enables society to discuss innovation processes, which can affect the rate of innovation even more than the journalism about the innovations themselves.

The role of news media in creating communication bridges over different cultures is of primary importance. The more complicated our world becomes through economical, technological and social change, the more essential that news media work properly, and that news quality remains as high as possible. One of the most challenging tasks for contemporary journalism is to understand and report on the global and local innovation ecosystems. To do this, a journalist needs at least knowledge of science, economics, technology, political processes and legal systems. This new challenge could be defined as a new journalistic beat, and called innovation journalism. (Nordfors 2003; Ainamo 2006.)

As McCombs (2005) showed with his agenda-setting theory of mass communication, the news media have a central role in the public agenda. The need for innovation journalism could be seen, for example, parallel to the situation in the late 1950s and early 1960s, when investigative reporting in the U.S. pushed journalists to do more than passively transmit events, in addition, doing only event-centred interpretive reporting. (Barnhurst - Mutz 1997, 48). As Glasser and Strauss (1998, 185) argue, “investigative journalism does not stand as the final arbiter of moral standards, but it does locate, select, interpret, and apply standards.”

Innovation Metaphors

The mass media play an important role in creating new words, concepts and metaphors. But research on such metaphors is just starting. Jerome Feldman (2006, 199) writes “there is strong evidence that essentially all our cultural, abstract and theoretical concepts derive their meanings by mapping, through *metaphor*, to embodied experiential concepts we explored earlier.” Metaphors may be defined as ‘two thoughts of different things active together and supported by a single word or phrase whose meaning is a resultant of their interaction’ (Ibid., 200). In general, much of the power of new metaphors comes from the ability to activate novel conceptual linkages (Ibid., 209.) Silicon Valley is a shining example of useful metaphor.

Many previous studies have noted the key role of metaphors in scientific development and especially when communicating and introducing new technology innovations. Albert Einstein and his Theory of Relativity is one of the first and most famous cases of the vital role of news media in introducing new inventions of science to mass audience. Einstein was the first media star from the world of science (Hassan 2003, 92).

Stöber (2005, 488) mentions that Alexander Graham Bell announced his invention of the telephone as an ‘improvement in telegraphy’ and later, in similar vein, television seemed to improve telephony (telephone combined with binoculars). Sawhney and Lee (2005, 394) write that radio was first framed as a wireless version of the telegraph technology, and the influence of the telegraph metaphor endured. They also argue that because of this powerful point-to-point metaphor, broadcasting was not even imagined for a long time. Furthermore, Internet Phone was first thought as a ham radio for Internet enthusiasts (ibid., 398).

Sawhney and Lee (2005) coined a metaphor called ‘arenas of innovation.’ By that, they underscored the meaning of communication and interaction in discovery and innovations—numbers of people are always involved in the creative processes. The arena of innovation is a unique, creative, leisure-oriented environment where technology enthusiasts interact about the new technology over new communication channels. For example, radio amateurs have played with new technology that also involved communication at a distance, and this created a fun-oriented culture of experimentation. Commercial gains were not the prime motive for ham-radio operators. But even if knowledge was often shared, peers have also been strongly motivated by competition and the pursuit of fame (Sawhney and Lee 2005, 395–397; Turner 2006).

The ‘marketplace-of-ideas’ metaphor illustrates how concepts can play key roles, for example in the battle of communication regulation and in politics (Napoli 1999). This metaphor contains elements of both democratic and economic theory. Obviously metaphors and their interpretation can significantly affect decision outcomes, say, in policy making. As Napoli (1999, 165) sums up previous research “metaphors can be enormously influential in legal and policy-decision making,” “metaphors help decision makers make sense of new and complex relations and facilitate understanding by providing structure for knowledge,” and metaphors may restrict the analytical process artificially.” In concluding his research on the marketplace of ideas metaphor, he argues that “the metaphor may be becoming less dynamic and, consequently, may be illuminating a narrower range of policy objectives and decision options that it has in the past” (ibid, 166).

Similarly, in his recent work Anders Hansen (2006) analyzed ‘nature’ and ‘natural’ metaphors in media coverage of genetics and biotechnology. Hansen argues that even though the first major public debates on biotechnology were in the 1970s, it was not until 1997, when the number of biotechnology articles increased sharply. At that time there were several controversial cases dealing with biotechnology, especially cloning a sheep, and genetically manipulated crops and food. Hansen chose two British quality newspapers, *The Guardian* and *The Times*, to analyse change from January 1986 to December 2003. The main result was the relative stability of the use of ‘nature’ over the 18-year period examined. His analysis confirmed that discourses of nature and the natural form a prominent part of press coverage of genetics and biotechnology. Hansen underscores that most nature genetics images and metaphors have a long historical pedigree and are deeply embedded in cultural history. In light of Hansen’s research, references to the leading science journal *Nature*, was a major source for the mainstream newspapers about biotechnology. So *Nature*’s agenda-setting role for the popular press must be stressed. It can be also argued that the news media usually focus on celebrating the rapid advances, breakthroughs and developments of science.

After all this, keep in mind the words of Ettema and Glasser (1998, 185), who said that “the character of language—often ambiguous and always value laden.”

The ‘Silicon Valley’ Metaphor and the News

So far, the role of news media has been almost totally neglected by researchers focusing on the phenomenon of Silicon Valley.

The seminal book about the Valley’s crucial networks, *The Silicon Valley Edge—A habitat for innovation and entrepreneurship* (2000) mentions media only ‘between the lines.’ ‘Media’ and ‘journalism’ were later suggested as an addition to the list of criteria for a good habitat for innovation that where suggested in the book (Nordfors 2004)². The importance of magazine covers is recognized briefly as

² D. Nordfors, “Why We Need Innovation Journalism and Where it May Have a Market”, *Innovation Journalism* Vol 1. No.3 (May 2004), http://www.innovationjournalism.org/archive/INJO-1-3_split/INJO-1-3_nordfors.pdf

hero-making (Kvamme 2000, 70). For a serial entrepreneur, the press can effectively ‘create buzz’ about his company, and via media the entrepreneur had been able to ‘manipulate public opinion’ (Lee 2000, 120). In this book, the roles of lawyers, executive search firms, accountants, consultants, engineers, economists and scholars were highlighted, but not journalists. However, it is argued here that when spreading new information and ideas to society, the role of news media has always been of a key importance, almost essential when looking back also to the history of Silicon Valley and creating the global awareness of it. It is not surprising that virtually every government seems to want to create its own Silicon Valley (Lee et al. 2000, 2).

Another central work about Silicon Valley’s social networks is Fred Turner’s *From Counterculture to Cyberculture* (2006). As he writes, networking skills were vital in what had begun to be called Silicon Valley. To understand each other, professional groups required shared knowledge and a common language, especially the power of metaphor, such as metaphors like computational metaphor (p. 27), virtual community and electronic frontier (142), online social networks (161), The Media Lab (178) and biological metaphors to economic processes (197). However, Turner does not tell us how the metaphor of Silicon Valley was created, nor how this new metaphor became a language.

The First Steps of “Silicon Valley” in Journalism

Silicon Valley is today a metaphor known worldwide for an area of successful entrepreneurship and innovation. Doug Henton (2000, 46) has argued that “if you were to name it today, it would probably be called ‘Innovation Valley.’” However, Lee et al. (2000, 4) emphasize that it is first and foremost a geographical region: “A sliver of land covering 1,500 square miles in Northern California.” Moreover, during the 1980s Silicon Valley was already seen not only as a geographical place but as a network. (Rogers–Larsen 1984, 79–80). Informal information exchange mechanisms and shared language were at the core of that definition (Sawhney–Lee 2005, 391–392).

Examining the metaphor “Silicon Valley” in more detail, we can conclude that it combines miniature chemical element with a vast landform. *Silicon* refers to the high concentration of semiconductor and computer-related industries in the area; *Valley* refers to Santa Clara Valley, at the southern end of San Francisco Bay. It can be also said that Silicon Valley spreads from its heart in Palo Alto to San Mateo County in the north and Santa Clara County in the south. (Malone 1985, 11; Lee et al. 2000, 4; Cheek 2002; Wikipedia May 2007).

It is believed that the term Silicon Valley was coined by editor Don Hoefler (1922–1986) in the weekly trade newspaper *Electronic News* in January 1971, when the paper published Hoefler’s three-part series on the history of the semiconductor industry in the Bay Area with the title “Silicon Valley U.S.A.” (Lee et al. 2000, 47; Cheek 2002, 15; NetWalley.com, 2006). Surprisingly, the phrase is not used once

in his text. In his articles, Hoefler still used old geographical names “the Bay Area,” “the San Francisco Peninsula” and “Santa Clara Valley” instead of “Silicon Valley” (Hoefler 1971a, 1971b, 1971c). But Hoefler was the editor of the publication and therefore was the one who chose the title for the series “Silicon Valley”.

Marion Lewenstein, emeritus professor of journalism at Stanford University, confirmed in an interview that Hoefler coined the term Silicon Valley (Lewenstein 2007). Lewenstein was one of the first reporters who covered new electronic industries in the Valley. She worked as a full-time reporter with the San Francisco bureau of Fairchild Publications from 1946 to 1957; from 1957 to 1985, she freelanced regularly for *Time*, *Fortune*, *Money*, *Electronic Weekly* (London), *Elektronik Nyheter* (Stockholm) and *The Times* (London). She worked in *Electronic News* just before Hoefler started his career in the paper

“By the time when Don used it (Silicon Valley), I was freelancing. Don started to use [the term] in Electronic News, which was the paper at that time. Then people in the Valley started to use it, refer it. Then . . . everybody used it.”

Writer, and educator, John Joss, who came to the Bay area in 1960, worked in the semiconductor industry, knew Intel’s founders as a friends, and was also a friend of Hoefler’s, confirms that ‘Silicon Valley’ was indeed coined by Hoefler. He said in the interview that:

“Don Hoefler was a fearless reporter, he said what he wanted. He coined the term Silicon Valley, which is journalistic. When I first heard it, I said ‘Gee, that’s good.’ Silicon Valley is a metaphor, state of mind, not a place. It includes the ‘Yes, we can do it, and right now’ attitude” (Joss 2007).

Hoefler was raised in Detroit and trained in electrical engineering at New York University. He spent more than a decade in broadcasting as an engineer at radio stations in the East. In 1960 Hoefler moved his family to California, fulfilling his lifelong dream, and started to work as San Francisco bureau chief for *Electronic News* (The Peninsula Times Tribune, 1.2.1980). In an article for *The Mercury News* he said that idea behind starting to use the term was that it “was simple enough” (The San Jose Mercury News, 4.16.1986).

Hoefler’s first “Silicon Valley U.S.A.” article started on the paper’s front page. It was the lead story, and the focus was on the first years of the new industry. It all began at Bell Telephone Laboratories in Murray Hill, New Jersey, where three scientists demonstrated the first successful germanium transistor in 1947. They were later (1956) honoured with the Nobel Prize, but only one, William Shockley, was interested in commercialising the invention. Shockley tried to start a business first in Boston, New England, in 1954, but he did not get enough funding, so he moved back to the West Coast, Palo Alto near Stanford University, where he was finally, 1955, able to start his Shockley Transistor Corporation. Shockley was a native Palo Alto and a Stanford alumnus. By 1957 eight of his top engineers quit the company, weary of Shockley’s management, and founded Fairchild

Semiconductors in nearby Mountain View. Among them were Robert Noyce and Gordon Moore, co-founders of Intel. (Hoefler 1971a, 1, 4–5)

The second “Silicon Valley U.S.A.” article also started on the front page, but ‘below the fold,’ with only a few sentences. In his second article Hoefler concentrated on the many spinouts from Fairchild during the 1960s, for example Signetics and General Micro-Electronics, and similarly, the subsequent spinouts from these companies (Hoefler 1971b, 1, 4–5).

The last part of Hoefler’s series was published on the inside pages. Subtitled ‘Stars & Superstars,’ it demonstrates that business journalism likes to focus on success stories. The article began from the formation of Intel, at that time a world-class sensation. “In July, 1968, it came—the shot heard round the world. Dr Noyce was leaving Fairchild and so were Drs. Gordon Moore and Andrew Grove.” (Hoefler 1971c, 4).

In concluding his series, Hoefler wrote that by the end of 1970 all 23 San Francisco Bay Area semiconductor firms but two—Siliconix and Steward-Warner—had common ancestry going back to Fairchild, hence Shockley. Furthermore, Hoefler argued that “ex-Fairchilders retain an awesome respect and emotional attachment to their Alma Mater” and “despite their fierce competition during business hours, away from the office they remain the greatest friends.” In other words, alumni networks were created during the industry’s first 15 year; only after this maturing process was the term “Silicon Valley” finally born. It is worth stressing that it was still seldom used, and then mainly by industry insiders in the San Francisco Bay Area.

For example Steward Brand did not use the term “Silicon Valley” in his seminal article about the up-coming internet era *Spacewar—Fanatic Life and Symbolic Death Among the Computer Bums* at the *Rolling Stones Magazine* (7th of December, 1972).

“THE WESTERN POLE of the U.S. electronics research and manufacturing axis is the San Francisco Peninsula; the eastern end is Boston's Route 128. The tilt of talent is westward.”

Fortune did not use the metaphor in a long article June 1974 (*California’s Great Breeding Ground for Industry*), but used this version as an introduction for its readers: “The high-technology community of Santa Clara County is concentrated in a dozen suburban towns twenty-five to fifty miles south of San Francisco.”

Silicon Valley in the Big US Daily Newspapers

Next, we will examine the evolution of the metaphor ‘Silicon Valley’ in more detail by analysing the news stream of the American mainstream media during the

1970s and early 1980s. The leading American dailies here are: *The New York Times*, *The Los Angeles Times*, *The Washington Post* and *The Wall Street Journal*.

Traditionally San Francisco Bay area has had two strong local newspapers *The San Jose Mercury News* and *The San Francisco Chronicle*. However, in an interview, Marion Lewenstein argued that both papers did not fully realize what was happening in the Valley's electronic industries during 1970s.

“During 1970s even The Mercury News did not cover it much. They were not aware of it. It was not until 80s before The Mercury News realized that they were sitting in a big story and did not before pay as much attention as it deserved.”

Michael Malone, ex-reporter of *The Mercury News*, wrote similarly in his book *The Big Score* (1985) that “As Silicon Valley has grown in importance, so has it increased in news coverage. Most of the nation's leading newspapers have reporters assigned to the high-technology beat.” In his book Malone gave special credits to two magazines, *Fortune* and *Business Week* for their “superb job in covering the Valley.”

Based on empirical findings, it seems that for a surprisingly long time the metaphor was used only by Bay Area insiders. It took almost four years for the mainstream media, after being published first by the trade journal, to present the metaphor to mass audiences. That happened in *The New York Times* January 16, 1975. The title of the story was *New Markets Are Sought for Miniaturized Computers*. Silicon Valley was mentioned with the quotation marks in the eight paragraph:

*“The buildings of Intel were put up on a former citrus orchard, Santa Clara south of San Francisco Bay next to San Jose, is in the heart of what those in electronics industry call ‘**Silicon Valley**’ (bold by the authors of this paper) because so many makers of semiconductors are here”.*

In hindsight, the story predicted wisely that “this development [miniaturized circuitry] is expected, within a few years, to give computer technology more impact on daily life than it has today.” But the editors did not realize the importance of the story by Victor K McElheny—it was positioned modestly on page 74.

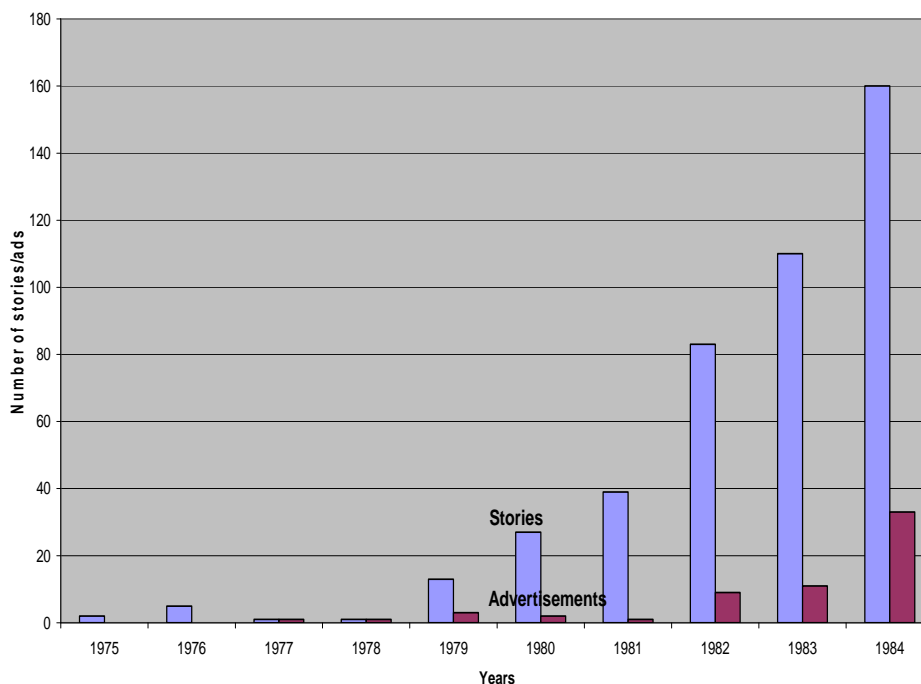
Even before this story, one, published in August 1971, mentioned the importance of “silicon crystals” for a “little known” industry in the Lower Hudson Valley. A free-lance writer on technological subjects, Anthony Broy, wrote that:

“Billions of transistors, diodes, resistors, integrated circuits and other semiconductors are built each year from chips of silicon or germanium. The dollar volume of semi-conductors is estimated at around a billion a year. How much of this to attribute to crystals is difficult to determine”.

He was clearly ahead of his time. It took several years from the new industry to enter the agenda of mainstream media. The first time the number of “Silicon Valley” stories exceeded the 100 threshold was 1983, and the peak was in 1999,

just before the burst of the so-called Internet bubble, 506 stories. Figure 1. illustrates also the variations with the number of ads.

"Silicon Valley" at The New York Times 1975 - 1984



At this point we may return to the year 1975, when Silicon Valley was first mentioned in *The New York Times*. Actually, it appeared twice. The other story using the metaphor Silicon Valley was published November 11 in a Market Column with the title *Whither Semiconductor Stocks?* In the column, John H. Allan wrote “how nearly 200 security analysts who follow the semiconductor stocks . . . journeyed to ‘Silicon Valley’—the area south of San Francisco where many of the companies are situated.”

Not until 1976 did Silicon Valley make it into the headlines of a major U.S. daily, once again, in *The New York Times*. In June 20, the headline was *Revolution in Silicon Valley*. This was also the first appearance of the metaphor without quotation marks. The map published with the story illustrated the San Francisco Bay area: in the South was Santa Cruz and in the North Berkeley, Oakland and San Francisco. Also San Jose, Santa Clara, Cupertino, Sunnyvale, Mountain View and Palo Alto were mentioned.

The story by Victor K. McElheny began by recalling the orchard past of the area: “It seems like an unlikely place to start a revolution. Yet the engineers tucked away behind temporary partitions within these buildings are convinced they are revolutionaries and that their discoveries will affect the way Americans will work, live and play within a decade.” In the story McElheny even predicted that “there could be computers on every desk, including school desks.” This was years before

the invention of the personal computer (IBM model number 5150 was introduced on August 1981 (Wikipedia)).

Micropocessors were invented in 1971. Intel, founded 1968, pioneered the Valley's semiconductor memories and microprocessors. The story mentioned that Intel's headquarters was built in a former pear orchard.

McElheny interviewed Dr. Robert N. Noyce, chairman of the Intel. Noyce said that "the new technology will favor individually controlled, self-sufficient devices that plug in anywhere, meaning that microelectronics will tend to decentralize control in the society rather than concentrate it". In the story, Mr. Lloyd of National Semiconductors dreamed of TV 'remote control' by saying that "in the not-too distant future the user could sit on a couch with a hand-held device containing both a programmable pocket calculator and an electronic set-tuner." It is interesting to see, again, how the devices of the future were first named by the most advanced devices of the time, calculators. Also digital watches were new, and the writer speculated about "wristwatch telephones." Similarly, Noyce predicted that travel will be abolished by rich enough communication, because most of the people could work at home. So far, such 'telecommuting' has not been the case.

After all this, it must be stressed that Silicon Valley's stories seem often to emphasise the future, and the orchard past is fading. Starting from the first Silicon Valley stories, the Valley appears to be almost a mystical place where the future is created by the innovative technology companies, which fight fiercely between themselves. As McElheny writes in his story, "the competition among half a dozen highly innovative companies, each struggling for 'firsts' that leapfrog another company's leadership in a product."

Later, another story, published in November 1976, interpreted Silicon Valley as consisting of "intellectual boom towns" and characterized the Valley climate as "highly competitive and expansionist." No author was named; the main point was that electronics engineers could earn degrees from nearby Stanford University via live television courses. Actually, that had been already possible for seven years. The headline did not use Silicon Valley but Santa Clara Valley, to be more precise, *Santa Clara Valley Leads in Circuitry*.

From this perspective Silicon Valley was obviously not yet a solid concept in the mainstream media. There are other examples. Stanford University's role in creating Silicon Valley is emphasized in a story "*Harvard of the West*" *Climbing in Ratings* (NYT, 10.10.1977). Written by Gene I. Maeroff, the story focused on the impact of the wealthy private university in creating a symbiotic relationship with hundreds of companies. As Maeroff writes: "One of their projects was to encourage the development of the so-called 'Silicon Valley' in surrounding Santa Clara County, extending southward from the university."

It was hard for an East Coast paper to admit that the West Coast ruled the new semiconductor industry. This was seen in a story *Forecast for Electronics Industry: Boston Area Hazy, California Sunny*, published November 12, 1976 by *The New York Times*. Victor K. McElheny wrote that "The Boston area once seemed to dominate these capabilities [electronic capabilities for rapid calculation and

communication] through its pioneering work in minicomputers. Now, there is a widespread belief in the electronics industry that the innovative and competitive advantage is shifting to the region south of San Francisco.” McElheny later defined Silicon Valley as “the California region, named for the vital element in the micro-electronic chips”.

At the same time, *The New York Times* was educating its audience by asking this question in its Weekly News Quiz (13.11.1976, 15):

“An area of south San Francisco known as Silicon Valley is offering strong competition to the Greater Boston Area in the field of: 1) Silicon products used in plastic surgery.2) Plastic irrigation pipes. 3) Ultraminiaturized electronic circuitry

It is still surprising that only two Silicon Valley stories were published between 1977 and 1978, after the 1976 stories about the new revolution in the Californian Valley. The first advertisement using Silicon Valley was published in 1978 by Electro/Optic Chemicals, seeking a sales representative for San Francisco (*NYT*, November 12, pg. F41). But this ad was not the first published by U.S. mainstream media as we see later.

After this journalistic “silence” period, 1977–1978, 13 stories mentioning the Silicon Valley were published by *The New York Times* in 1979. Still during that year the term was used in five stories, hesitantly, and also once with false geographical definition, “Southern California”.

“Now comes word from California’s so-called Silicon Valley . . . ” (*NYT*, 3.5.1979, D2)

“‘Silicon Valley’ in North California Becomes Haven for Refugees” (subtitle), and “Like Mr. Do, hundreds of Indochinese refugees have found work in the Santa Clara Valley’s electronics industry, known here as ‘Silicon Valley’ . . . ” (NYT, 7.10.1979, 88)

*“Today, as a co-founder and president of ROLM corporation, he manages one of the fastest growing of the fast growing electronic companies in so called Silicon Valley – the area of **Southern California** where the industry is concentrated.” (NYT, 4.6.1979, D1)*

“Although AMD, as the company is known here in ‘Silicon Valley,’ has been playing follow the technology leaders for the last 10 years ”(NYT, 25.2.1979, F1)

“Among the ranks of high-technology companies that dot the landscape of Northern California’s ‘Silicon Valley,’ National Semiconductor Corporation is the prosperous giant of integrated circuitry - -..” (NYT, 4.2.1979, F1)

When was the concept used by mainstream media (i.e. *The New York Times*) without doubt, quotation marks or so-called phrase additions? It can be argued that this was not until the 1980s.

During the 1980s another important step was taken in the evolution of the concept of Silicon Valley. 'Silicon Valley' went from being a metaphor describing the character of a specific geographical place, to become a hallmark of the innovation ecosystem of the semiconductor industry. In this capacity, it became eligible as a component in new metaphors, used for describing the proliferation of the IT industry. Journalists tried to transfer the 'Silicon' term to other parts of the U.S. For example Dallas-Fort Worth Area was called 'Silicon Prairie' (NYT, 14.10.1980, NRS2) and even internationally, referring to Scotland's 'Silicon Glen'.

Chuck House, Executive Director, Media X program at Stanford University argues that he named Pike's Peak region (Colorado Springs) in a keynote speech December 1979 as a Silicon Mountain. He worked at that time as the Operations Manager for Hewlett-Packard's Logic Analyzer Operation in Colorado Springs, which was the number 2 fabrication city in the world. House remembers that Colorado Springs had silicon processing plants for nine or ten companies at that time. The first was Silicon Valley with its 20 companies. To House's knowledge, no other community in the world had more than five or six. (House 2007)

In some cases, it is not the word 'Silicon', but the word 'Valley' which became used, such as 'Robotdalen' in Västerås, Sweden, an innovation cluster initiative for robotics.

Next, we focus on the headlines of *The New York Times* using Silicon Valley from 1976 to 1983. Headlines are the most important part of the news story. Silicon Valley was mentioned all together 25 times in the headlines during the first eight years. It was still used with quotation marks in 1982 in one story. (*Leaking Chemicals in California's 'Silicon Valley' Alarm Neighbors* NYT, 05.20.1982, P A22.)

There is much to be said about the content of the first 300 stories or advertisements published by *The New York Times*, but because of space limitations, a full description of the stories is not possible here. However, after analysing the first 300 news stories and advertisements including the metaphor Silicon Valley, during 1976–1983, it is possible to define at least five different thematic topics and periods:

1) First stories (1975)

New Markets Are Sought for Miniaturized Computers (Jan 16, 1975. p. 74)

Market Place; Whither Semiconductor Stocks? (Nov 11, 1975. p. 44)

2) National competition stories (1976 -)

Forecast for Electronics Industry: Boston Area Hazy, California Sunny (Nov 12, 1976. p. 73)

Santa Clara Valley Leads in Circuitry (Nov 12, 1976. p. 73)

'Harvard of the West' Climbing in Ratings (Oct 10, 1977. p. 44)

San Diego Attracts Electronics Plants (Mar 28, 1979. p. D1)

3) Revolution and success stories (1976 -)

Revolution in Silicon Valley (Jun 20, 1976. p. 97)

Hewlett-Packard Tips Toward Computers Two New Products Betting on a Technology 'Rifle Shot' Approach Management Structure (Jul 2, 1978. p. F1)

ROLM's Success in Silicon Valley (Jun 4, 1979. p. D1)

4) World competition stories (1980 -)

Europe Joins Microchip Race; Competition Heats Up With U.S. and Japan 'The Industry Is Changing' European Microchips (Jan 29, 1980. p. D1)

Technology; Soviet Gaining In Computers (Nov 6, 1980. p. D2)

Everyone's Trying To Start the New 'Silicon Valley'; States and cities give tax breaks, research aid and loans to lure high technology (Mar 27, 1983. p. EHT6)

Britain's Science Corridor; It's not quite Silicon Valley, but M4 attracts high technology. (Apr 24, 1983. p. F8)

5) Downturns and problems stories (1980 -),

Allure of Silicon Valley Fades; Drop-Off in Electronics Engineers Silicon Valley Faces Slow-Growth Period (Apr 14, 1980. p. D1)

Golden State Losing Glitter (Oct 12, 1980. p. NES3)

Leaking Chemicals in California's 'Silicon Valley' Alarm Neighbors (May 20, 1982. p. A22)

Data Hunting Held Common; Trade Ethics in Silicon Valley (Jun 25, 1982. p. D1)

How F.B.I. Set Up In Silicon Valley (Jun 28, 1982. p. D1)

2 Arrested in Silicon Valley Theft Case (Jul 28, 1982. p. D3)

Comparing advertisements published by *The New York Times* to those published at the same time by other major U.S. dailies, it can be argued that the first newspaper to mention the Silicon Valley metaphor was *The Los Angeles Times*. The paper published a Teledyne Semiconductor advertisement on the 14th of February 1973. The ad cited “Super opportunity to join a ‘Silicon Valley’ firm on the San Francisco peninsula.” But the first journalistic story was published a year later in *The LA Times* than in *The New York Times*. An Associated Press writer, Rhonda Seegal, wrote a story titled *Tiny Computer Expected to Revolutionize Industry* (Aug 23, 1976), revealing that “Intel Corp, National Semiconductors, Texas Instruments, Motorola, Signetics and others are manufacturing microprocessors by the thousands. Most of their factories are in an area south of San Francisco that has become known in the industry as ‘Silicon Valley’.”

During the 1970s *The LA Times* published, all together, 17 stories mentioning the metaphor of Silicon Valley, mainly with the quotation marks. First time Silicon Valley was without any quotation marks in a small story about the shortage of electronics engineers (*LAT*, Oct 22, 1978, p. E3).

The first bigger Silicon Valley story was published by *The Los Angeles Times* on December 2nd 1979, written by Kathryn Harris, titled *Silicon Valley is in the Chips*

but it's causing Problems. The quotation here, once again, demonstrates how journalists create new metaphors.

“Housing simply has not kept pace with the industrial boom in this Northern California county, where approximately 700 electronics-related companies have replaced the orchards that once carpeted the northern Santa Clara Valley floor from San Francisco Bay southeast to San Jose. This 20-mile corridor—nicknamed Silicon Valley, after the industry’s silicon chip—has dominated electronics technology in past years” (p. E1).

The Wall Street Journal used Silicon Valley stories first from *The New York Times Abstracts* (two stories in 1976, one in 1978), and from *Canadian Globe & Mail* (two stories 1979). The paper's first own story was written August 27, 1979, and it was about semiconductor companies' increasing sales.

The Washington Post was the last of the big four to recognize Silicon Valley. Only three stories published in the paper during the 1970s referred to Silicon Valley, the first not published until August 4, 1978 (about the video game industry, written by Tim Taylor). Silicon Valley was mentioned only briefly and with quotation marks. Two other stories discussed the competition between Stanford University and the University of California, Berkeley (Dec 30, 1979) and about the energy and U.S. demographics (Jun 20, 1979).

Discussion

This article has been a modest attempt to examine the evolution of the metaphor Silicon Valley in American journalism by analysing mainly American mainstream media coverage during the 1970s and the beginning of the 1980s. Future researchers should study the regional and local press. But this comparison of national dailies offers valuable starting points for further studies. Also more interviews should be done with the contemporaries, and more archives should be studied to understand the big picture, the interaction between the local, national and international media.

The main result of this study, so far, has been to identify the key role of *The New York Times* in introducing the metaphor of Silicon Valley into wider audience in the United States. However, it took almost exactly four years for the mainstream media, after being published first by a trade journal in 1971, to present the metaphor for mass audiences. Furthermore, it was still used with quotation marks in one *NY Times* story in 1982. In conclusion, it took over a decade for this now famous metaphor to become a language.

It can be argued that the role of journalism in creating new metaphors and neologisms is important, and the pace has dramatically changed, speeded up, first with the 24/7 tv-news, and then with the digitalization of the media, and especially after the success of the Internet.

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