Mechanists of the Revolution

The Case of Edison and Bell
Talk Overview

• Situating this Project in a Larger Context
• Floridi’s Four Revolutions
• Four Information Revolutions
• The Age of Automated Information Machines
• The Emergence of Multimedia Information & Information Networks
• Early Uses of the Telephone & Wireless Broadcasting
• Some Quick Conclusions
Previous Work


Floridi’s Four Revolutions

Copernican Revolution – heliocentric cosmology removed humanity from the center of the universe

Darwinian Revolution – the theory of evolution removed humanity from the center of the biological kingdom

Freudian Revolution – psychoanalysis showed that we are not transparent to ourselves

Information Revolution – our current environment, which is inviting yet another transformation in the way we understand ourselves (Turing Revolution)
Information Revolutions

Epigraphic Revolution – the invention of writing and the alphabet effect

Printing Revolution – the mass production of writing

Multimedia Revolution – the industrialization of information through mechanical means

Digital Revolution – the widespread use of digital information following the arrival of the personal computer
The Multimedia Revolution

By Multimedia Revolution we mean the period from the invention of telegraphy (1836) and the Daguerreotype (1839) to the arrival of the personal computer (late 1970’s).

Thus, it ultimately includes, among other things, radio (1906) and television (1926).

As a motto, it could be described as the era in which information was made to move. That is, information was decoupled from the exigencies of the means of transportation.

The flow of information was itself industrialized!
The Multimedia Revolution

1836 – Telegraphy
1839 – Daguerreotype
1856 – Telegraphic Printer
1863 – Stock Ticker
1877 – Telephone
1878 – Phonograph
1880 – Light Bulb
1880 – Photophone
1881 – Wireless Telegraphy
1881 – Wax Cylinder
1891 – Motion Picture Camera
1898 – Rotary Telephone

1906 – Radio
1906 – Teletype
1914 – Telescribe
1926 – Television
1927 – Electric Phonograph
1928 – National Broadcasting System
1928 – Magnetic Tape
1948 – Cable Television
1958 – Cassette Tape
1963 – Touch Tone Phone
1966 – GE Color Television
1969 – Video Cassette Recorder
The Edison Phonograph

1. Letter writing and all kinds of dictation without the aid of a stenographer.
2. Phonographic books, which will speak to blind people without effort on their part.
3. The teaching of elocution.
5. The "Family Record"--a registry of sayings, reminiscences, etc., by members of a family in their own voices, and of the last words of dying persons.

1878
The Edison Phonograph

7. Clocks that should announce in articulate speech the time for going home, going to meals, etc.
8. The preservation of languages by exact reproduction of the manner of pronouncing.
9. Educational purposes; such as preserving the explanations made by a teacher, so that the pupil can refer to them at any moment, and spelling or other lessons placed upon the phonograph for convenience in committing to memory.

1878
10. Connection with the telephone, so as to make that instrument an auxiliary in the transmission of permanent and invaluable records, instead of being the recipient of momentary and fleeting communication.

North American Review, June 1878
Early Uses of the Telephone

News Reports  
Church Services  
Concerts  
Weather Reports  
Sporting Event Reports  
Train Arrival Times  
Wake-Up Calls  
Telemarketing  
Election Campaigning  
Lullabies for Babies
Herbert Casson’s Description

“What we might call the telephonization of city life, for lack of a simpler word, has remarkably altered our manner of living from what it was in the days of Abraham Lincoln. It has enabled us to be more social and cooperative. It has literally abolished the isolation of separate families, and has made us members of one great family. It has become so truly an organ of the social body that by telephone we now enter into contracts, give evidence, try lawsuits, make speeches, propose marriage, confer degrees, appeal to voters, and do almost everything else that is a matter of speech.” (The history of the telephone 199)
Wireless Broadcasting

With the advent of radio broadcasting on the “wireless” around 1906, the telephone began to take on its modern role …

… and multimedia information took to the airwaves.
Spread of Telephone Technology

<table>
<thead>
<tr>
<th>Year</th>
<th>Telephones</th>
<th>Population</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877</td>
<td>778</td>
<td>50.1 million</td>
<td>.002%</td>
</tr>
<tr>
<td>1900</td>
<td>801,000</td>
<td>76.2 million</td>
<td>1%</td>
</tr>
<tr>
<td>1920</td>
<td>8.7 million</td>
<td>106 million</td>
<td>8%</td>
</tr>
<tr>
<td>1940</td>
<td>18.3 million</td>
<td>132.1 million</td>
<td>14%</td>
</tr>
<tr>
<td>1960</td>
<td>63 million</td>
<td>179.3 million</td>
<td>35%</td>
</tr>
<tr>
<td>1983</td>
<td>150 million</td>
<td>226.5 million</td>
<td>66%</td>
</tr>
</tbody>
</table>

Figures for the United States from Porticus.org and the U. S. Census Bureau
“There is no doubt that the day will come, maybe when you and I are forgotten, when copper wires, gutta-percha coverings, and iron sheathings will be relegated to the Museum of Antiquities. Then, when a person wants to telegraph to a friend, he knows not where, he will call in an electro-magnetic voice, which will be heard loud by him who has the electro-magnetic ear, but will be silent to everyone else. He will call, ‘Where are you?’ and the reply will come, ‘I am at the bottom of the coal-mine’ or ‘Crossing the Andes,’ or ‘In the middle of the Pacific.’” (Fahie, 1900, vii)
Conclusions: What Is Not New

Recognizing the facts laid out here, we see clearly that a rich and vibrant global information network was already in place prior to the Digital Revolution. Thus, digital technologies cannot be credited for inaugurating the information age.

As long as there have been people, there have been information networks. With the industrial age, decoupling information flow from transportation increased the spread and speed of information on these networks to bring a world of people closer together.

What, then, is novel about the Digital Revolution?
Conclusions: What Is New

Information processors existed on the network prior to the arrival of the computer in the form of human beings. However, automated information processors did not, and thus, they are new.

Furthermore, when automated and human information processors appear together on the same network, rich interactivity between them is possible in a way that it was never before.

Because of both of these, computer-mediated social relationships are now possible. Thus, for the first time, semi-autonomous machines dramatically effect the shape and texture of human interactivity, and, therefore, the meaning of human identity and our understanding of our place in the …


