

# **THE N-DIMENSIONAL KNOWLEDGE PROXIMITY APPROACH TO TECHNOLOGY ASSESSMENT: THE CASE OF QUANTUM ELECTROMAGNETIC SYSTEMS**

Fred B. Wood, Sr., PhD (elec. engin.), P.E.  
Computer Social Impact Research Institute  
2346 Lansford Ave., San Jose, CA 95125  
ph:408-723-7818, e-mail:csiri@igc.apc.org

## **1. Abstract**

Forecasting and assessing the development of revolutionary technologies pose a substantial challenge because the techniques such as trend extrapolation, evolutionary projections, substitution curves, cybernetic systems analyses, and the like are limited in their ability to capture "out of the box" or "wild card" possibilities. Over the last several decades, successive iterations have been developed of a multi-dimensional systems approach to assessing revolutionary technologies (Wood, 1979, 1996). This approach includes a structure for relating knowledge about classes of activity, levels of phenomena, and stages of evolution. It is called the "N-Dimensional Knowledge Proximity" systems approach, because it emphasizes an identification of almost current knowledge up to 1992 (six years old to cooperate with military institutions to protect security for six years) about a technology so as to identify and understand the linkages between different dimensions or variables, and to provide a robust basis for projecting future developments and implications. In this paper, the history and current status of the Knowledge Proximity Approach is summarized, with emphasis on refinements that have been made since the 1996 ISSS meeting in Budapest, Hungary. The objective in limiting security classification of new weapons concepts to six years is to let religious and public service organizations have a general knowledge of the trend in weapons development from 1946 to 1992 so that they can start work on the ethical problems involved with new weapons systems without disturbing the secrecy of the latest weapons development. In World War II the United States tried to keep the Atomic bomb secret until after we had killed 66,000 people and wounded 69,000 people at Hiroshima on Aug. 6, 1945. This did not give the people who specialized in dealing with ethical questions a chance to sort through the ethical questions until after the new weapon had been used. A more humanitarian way would be to have a United Nations Committee discussing the ethics of the new class of weapons before some conflict escalates into World War III. The National Council of Churches, the Buddhist Peace Fellowship, and other groups could discuss with military leaders whether six years is adequate or whether more time like ten years is needed by the military institutions for initial new weapons design.

Keywords: Creation, Electromagnetics, Ethics, Weapons, Medicine

## **2. Description of Cube**

### **2.1 History of Cube**

While a senior in high school in 1936 I studied the developing war of Hitler's Nazis and concluded that unless something changed, Hitler would probably win the war before I could graduate from college in my proposed major of sociology. I decided that I should change my plans and major in electrical engineering so that I could design microwave RADAR systems to stop Hitler's attack on England. I changed my courses for the senior year to meet the requirements for admission to the School of Engineering at U.C. Berkeley. I entered U.C. Berkeley in Engineering and attended sociology seminars at the University Y.W.C.A. to maintain contact with developments in the social sciences. At the end of my junior year I had a summer job with the Pacific Gas & Electric Co. in Oakland, California. In the middle of the July 1940, a Major in the U. S. Army Signal Corps came to the PG&E facility and asked if I could resign from my PG&E job that

## Knowledge Proximity Approach

day and sign on to work on a government microwave project the next morning at U.C. Berkeley.. I accepted the offer and started on the microwave research the next day in Berkeley. In January 1940 the project was transferred to M.I.T in Cambridge, MA. At M.I.T. I was on a team that designed the microwave transmit-receive circuits for the SCR-584 RADAR that successfully shot down 95% of the German V-1 Rocket Bombs after the SCR-584 units got into production. While working on RADAR development, led a discussion group Sunday evenings at the Arlington Street Church (Unitarian) in Boston and participated in lunchtime discussions at the Technology Christian Society at the MIT Cafeteria. I kept a log principal topics or ideas that were discussed at the Church meetings and mad a toy skyscraper of a toy Erector set and glued labels of the topics inside the appropriate sub-cubes in the skyscraper. I then took the skyscraper to the Harvard Sociology Department for discussions of how this related to the history of sociology.

### 2.2 Current Version of Cube

The current approach can be viewed as a large cube structure in three-dimensional space, shown in Fig. 1, where: x-axis = class of activity (spirituality, philosophy, meta-science or meta-physics, science, engineering, decision theory, production, and emergency action; y-axis = levels of phenomena (ether information, global, social, psychological, biological, chemical, physical, ether energy); and z-axis = time stages of evolution and cycles (astrophysical, physical and chemical, geophysical, biological, sociological, technological, and conscious coevolution with the biosphere). Thus the large cube consists of  $8 \times 8 \times 7 = 448$  embedded cubes. For a current or prospective technology, each embedded cube can be considered to determine the extent of knowledge for that cube (or three-dimensional relationship) and as that "cube of knowledge" relates to other cubes-thus the term "knowledge proximity."

### 3. Relationships between sub-cubes

Another aspect of knowledge proximity is identifying and defining the feedback and feedforward relationships and loops between and among knowledge cubes. The actual number of dimensions developed for a given technology will depend on the number of knowledge cubes and their interrelationships-thus the term "n-dimensional." Some of the knowledge cubes related to understanding the energy and information available from the quantum vacuum flux are:

- Cube: A4W: Human Healers: Brennan, Barbara Ann, 1992, *Light Emerging*. New York: Bantam Books
- Cube: A5(&8)X: Communication in Quantum Vacuum Hologfield: Detzler, R.E., 1988, *Your Mind Net: Programming the Subconscious*, Redmond, WA: Spiritual Response Center
- Cube: A6Z: Spiral Template of Evolution: Hubbard, Barbara Marx, 1995, *The Revelation, 2<sup>nd</sup> Ed.*, Novato, CA: Nataraj Publishing. Pp. 86-87.
- Cube: A6Z: Power of Our Social Potential: Hubbard, Barbara Marx, 1998, *Conscious Evolution - Awakening the Power of Our Social Potential*, Novato, CA: New World Library.
- Cube: A8X: Communicating with God: Yogananda, Paramahansa, 1954 Edition, *Autobiography of a Yogi*, Los Angeles: Self Realization Fellowship Press.
- Cube: B2Y: Matrix for Testing Hypotheses, Panofsky, W.K.H., 1962 Ed., *Classical Electricity and Magnetism*, Reading, MA: Addison-Wesley.
- Cube: B6X: Transitioning of Humankind to New Enlightenment: Hall, Dan and edited by Valerian, Val, 1995, *Avoiding Extinction*, Yelm, WA: Leading Edge Research Group.
- Cube: B6X: Current Competing Philosophies: Woodhouse, M. B., 1996, *Paradigm Wars - Worldviews for a New Age*, Berkeley, CA.: Frog, Ltd
- Cube: B4W: Bioradiation: Clark, H. R., 1996, "Evidence for Bioradiation of Animals - Initial Findings" *Townsend Letter for Doctors & Patients*, May 1996, pp. 56-60.
- Cube: C1Y: Tesla Type Weapons: Cheney, Margaret, 1981, *TESLA Man out of Time*. New York: Laurel (Dell)
- Cube: D1U: Energy in Quantum Vacuum: Podolny, R., 1983 Russian Ed., *Something Called Nothing - Physical Vacuum What Is It?*, 1986 English Ed., trans. By Nicholas Weinstein, Moscow, USSR: Mir Publishers.

## Knowledge Proximity Approach

- Cube:D2(&1)Y: Scalar Electromagnetic and Quantum Potential Weapons: Bearden, Tom, 1991, *Gravitobiology*. Chula Vista, CA: Tesla Pub. Co.
- Cube: D2Y: Gauge Invariance: Landau, L and Lifshitz, E., 1941, *Russian*,. *The Classical Theory of Fields*, English Trans. 1951, Addison Wesley Press, Cambridge, Mass.
- Cube: D2Y: Maxwell's Equations: Maxwell, J. C. 1873, *Treatise on Electricity and Magnetism*.
- Cube: D4X: Biological Evolution: Sahtouris, E., 1997. *The Biology of Globalization (3 parts)*. Internet: <http://cyberjournal.org/cadre/cadre-library>
- Cube: D4W: Biological Evolution: Sahtouris, E. & Harman, W. in press. *Biology Revised*.
- Cube: D(4&)W: Quantum Biology: Rein, Glen, 1992, *Quantum Biology: Healing with Subtle Energy*, Palo Alto, CA: Quantum Biology Research Labs.
- Cube D8T: Tired Light in Quantum Vacuum Flux: La Violette, P. A., 1994. *Subquantum Physics: The Alchemy of Creation*, Schenectady, NY: ISBN 0-09642025-0-6, see also: 0-89281-457-8.
- Cube D8T: Universal Language & Post-Darwin Evolution: Bergson, B., in press.
- Cube: E(1&2)Y: Overunity Engines: Manning, Jeanne, 1996. *The Coming Energy Revolution - The Search for Free Energy*, New York: Garden City: Avery Publishing Group.
- Cube:E2Y: Maxwell's Equations: Harnwell, G. P., 1938. *Principles of Electricity and Electromagnetism*, NY: McGraw-Hill.
- Cube: E(2&4)Y: Galois Field and Shift Registers: Peterson, W. W., 1961, *Error Correcting Codes*, NY: John Wiley & Sons and M.I.T.
- Cube: E2Y: Maxwell's Equations: Valerian, Valdamar, 1992, *MATRIX III, Volume 1: The Psycho-Social, Chemical, Biological and Electromagnetic Manipulation of Human Consciousness*, 1992, Yelm, WA: Leading Edge Research Group., pp. 301-312, 316, 317-320.

The way I have used the N-Dimensional Knowledge Approach is to build a set of library shelves corresponding to the plan in Fig. 1, and then place the books on the shelves in the appropriate cubes. When I find a gap in the shelf space, I examine the books surrounding the space to see, if there are relations between the different cubes around the space. At an earlier stage of development of this method, I kept finding that I had missed a lot of Tesla's concepts. I then made a study of different book stores and found that they had most books on Tesla in their metaphysical sections. I solved that problem by changing my cube to have a slice of the cube allocated to meta-science or metaphysics.

### 4. Quantum Electromagnetic Systems

Next this approach is applied to an important emerging area of science and technology: quantum electromagnetic systems. Here the possible impacts are analyzed in such areas as: underlying scientific paradigm shifts; re-invention of electrical engineering and physics; possible applications to energy, environment, transportation, national defense; implications for war and peace; new or intensified issues of philosophy, spirituality, and the human condition, and what some call the conscious coevolution of humankind with a sustainable biosphere; and for processes of democratic control over such revolutionary possibilities.

J. C. Maxwell (1831-1871) solved the two partial differential equations for the relationship of electric and magnetic fields in the ether (Maxwell, 1873). Using complex numbers, the resultant equations were complicated. He found that by using hypercomplex numbers, or quaternions (defined by Frieberger, editor, 1960), that the equations took on a simpler form. Science colleagues simplified the equations to get a vector form of equations that would be simpler for those "dumb engineers" to understand. In so doing, the resultant equations known as "Maxwell's Equations" no longer accurately represented the full range of possible forms of electromagnetic waves.

In the early 1890's, Nicola Tesla, an electrical engineer from Croatia, who had worked for the Hungarian Central Telegraph Office, and then migrated to New York City, objected to the simplified, inaccurate version of Maxwell's Equations. He went back to Europe to argue with Hertz and other contemporary scientists of Europe. They admitted that the equations were approximate, but claimed they were good enough for electrical engineering work on telephone, telegraph, and radio. Tesla announced that he had experimentally

## Knowledge Proximity Approach

generated and measured longitudinal electromagnetic waves that were not predictable by the official Maxwell-Heaviside Electromagnetic Wave Equations.

Whittaker in 1903 and 1904 published some papers on electromagnetic waves that were not predicted by the official Maxwell Equations. Engineering textbooks still display the approximate Maxwell Equations, while since 1963 some textbooks include a sentence explaining that the equations are approximations. Whittaker's 1903 and 1904 papers are reprinted in the book, *Gravitobiology* (Bearden, 1991).

If one believes that the textbook Maxwell's Equations are the correct exact equations for electromagnetic waves, then one is likely to change their mind too late, when someone using the complete equations has designed and built one of the Tesla type weapons, blows up your plane with a scalar electromagnetic weapon, or freezes you to death with a quantum potential weapon, or cooks you alive with another type of quantum potential weapon. These possibilities are reviewed by Bearden in the book *Gravitobiology* in Cube D2Y

### 5. General Conclusions

The verification that there are longitudinal electromagnetic waves that have been ignored by mainline Western Science and Engineering for 119 years, i.e, 1873 to 1992, means that the countries that develop an understanding of Tesla's weapons concepts and Priore's medical healing instrument concepts and the concepts of designing overunity engines using energy from the quantum vacuum flux, have the prospect of determining whether humankind destroys all living matter on our planet including themselves, or lets a dominant country or rogue government control the whole planet, or organizes a United Nations committee to supervise the development of new weapons of control and destruction, and medical instruments for healing based on using energy from the quantum vacuum flux and designing quantum vacuum overunity engines to replace the burning of fossil fuels. Environmentalists will need to study quantum mechanics to understand how they can expedite the production of overunity engines. The religious groups that use the quantum vacuum flux as a communication medium and/or a source of healing energy, need to do research on whether the commercial and military uses of the same resources will jeopardize their spiritual functioning. Civil libertarians will have to get up-to-date on their quantum physics to understand how psychoenergetics can be used to violate people's civil liberties by exercising mind control over groups of people.

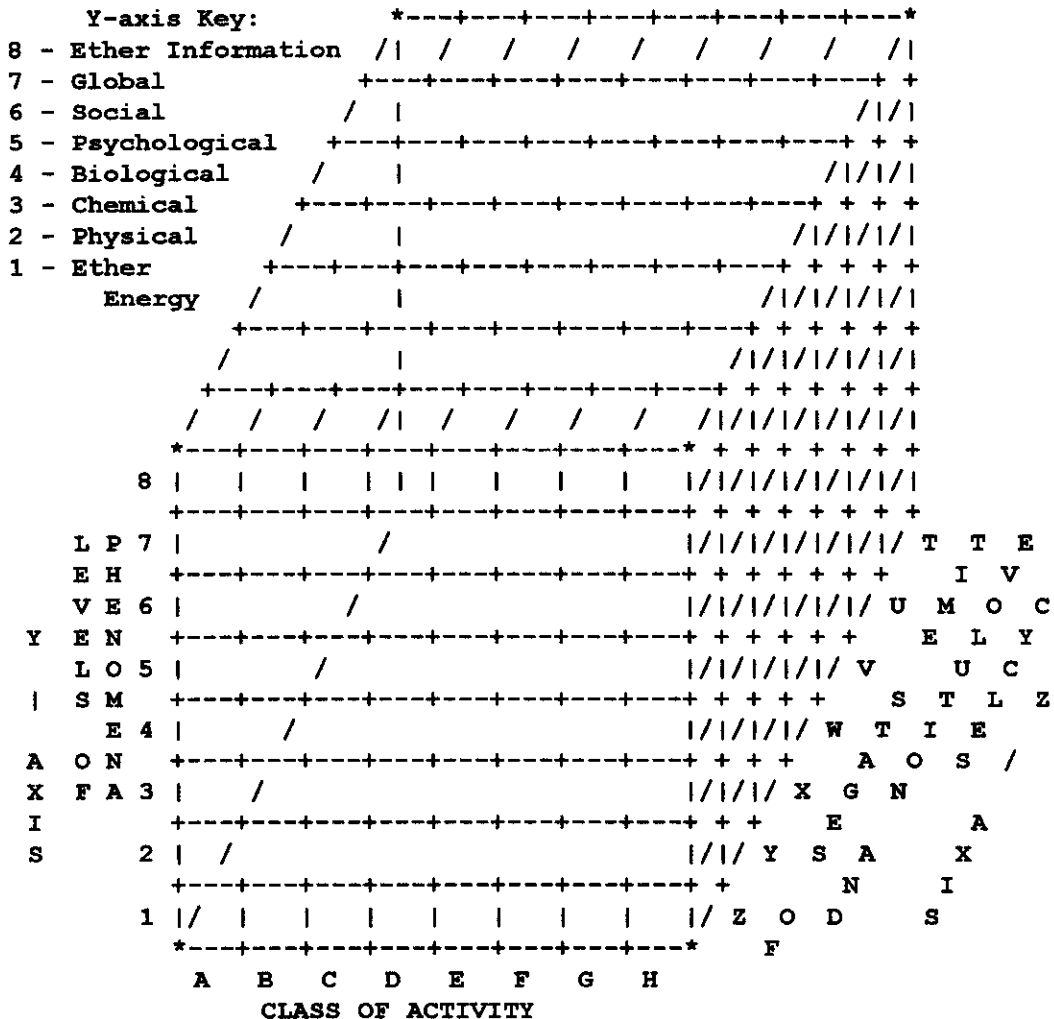
### 6. References

- Frieberger, W. F., Editor-in-Chief, 1960, *The International Dictionary of Applied Mathematics*, Princeton, NJ: D. Van Nostrand Co., p. 735.
- Wood, F. B., Sr. 1979, "A Proposal for a Quasi-Completeness Test of General Systems Theories Using Computer Conferencing and Computer Data Base Searching," in *SGSR Proceedings*, London.
- Wood, F. B., Sr. 1996, "A Visionary View of the State of Whole Systems Practice by and for the People in the year 2020 A.D.," *Proceedings of the Fortieth Annual Meeting of the ISSS*, pp. 83-93, Fig. 6.

# Knowledge Proximity Approach

WP8C1724(1-5), WP8P1697(6)

## THE GREEN CUBE - TEMPLATE - FOR LIBRARY OF EVOLUTION



### X - AXIS

**X-axis Key:**

**Z-axis Key:**

- |                                 |  |
|---------------------------------|--|
| A - Spirituality                | T - Astrophysical Evolution & Cycles     |
| B - Philosophy                  | U - Physical and Chemical Evolution      |
| C - Meta-Science (Meta-Physics) |  |
| D - Science                     | V - Geophysical Evolution & Cycles       |
| E - Engineering                 | W - Biological Evolution                 |
| F - Decision Theory             | X - Sociological Evolution & Cycles      |
| G - Production                  | Y - Technological Evolution              |
| H - Emergency Action            | Z - Conscious Coevolution with Biosphere |

Fig. 1. The Green Cube Template for Evolutionary Library.-

PART 2 of ISSS Paper of July 23, 1998  
at Georgia Institute of Technology, Atlanta  
Georgia, USA

"The N-Dimensional Knowledge Proximity Approach  
to Technology Assessment: The Case of Quantum  
Electromagnetic Systems.

Fred B. Wood, Sr., Computer Social Impact  
Research Institute, e-mail: csiri@iqc.apc.org

Since submitting this paper 2 more figures have been  
added: Fig. 2 Blank markers for the 448 cubes of Fig. 1  
Fig. 3 Sample case of insertion of cubes: A4W,  
Light Emerging; A5X: Your mind net: programming  
the subconscious; A6Z: Spiral Template of Evolution  
-----; D4X: The Biology of Globalization;  
C1Y: Tesla type weapons; ----- D2 (& 4) Y: Gravit  
biology; D2Y: Maxwell's equations; D4X: The Biology  
of Globalization; ----- E (~~2~~ 2) Y: Overunity engine  
----- E2Y: The Psycho-Social, chemical, Biological and  
Electromagnetic Manipulation of Human Consciousness

7.0 In this Part 2 I will summarize briefly relevant facts about  
Maxwell's equations

7a. Then I will outline my method of using the 448-cube  
skyscraper as an aid to locating the missing types of  
electromagnetic waves omitted from USA electrical engineer

textbooks from 1890 to 1996.

7b. Then I will describe the scalar electromagnetic weapons described by Nicola Tesla, 1908 to 1917.

7c. Then I list the evidence that from 1976 to 1997 some organization or organizations have been testing such weapons. (21 years) Since I do not know who is doing this weapons research, I shall describe the group as "The Khanate of Tesla Weapons." My old maps of Central Asia show the "Khanate of The Golden Horde" and "Khanate of Kaidu" covering central Asia and a segment of Russia. I estimate that it has taken from 2000 to 4000 scientists, engineers, and technicians from the middle 1950's to now to develop prototypes of a family of Tesla weapons.

7d. I do not detect any information on the social and economic views of "The Khanate of Tesla Weapons." My first guess is that the "Khanate" aims to restore some kind of socialism to the Russian Confederation, possibly in the year 2002.

7e. At this meeting of 150 systems scientists this week, several speakers pointed out the defects of the capitalist system that are leading to excess profits to the capitalist leaders, decreasing effective income to the middle classes in the U.S. and increasing poverty and homelessness in the USA and in third-world countries.

The speeches of Anatol Rapoport, "Peace, Sustainability, and Military Technology" and Jeff Gates, "Sustainable Economics

and the ownership solution," outlined problems in the present capitalist system. Our aims (economic) center on putting feedback loops in the capitalist system to bring the ordinary citizens into partial ownership and into the decision processes of the capitalist system to make a more humanitarian system.

7f. I propose that a refinement of material from Rapoport, Gates, and others be organized with some of my material as an "OPEN LETTER TO THE KHANATE OF TESLA WEAPONS," and be put on an Internet Web-Site, since we don't know the true identity or address of "The Khanate of Tesla Weapons."

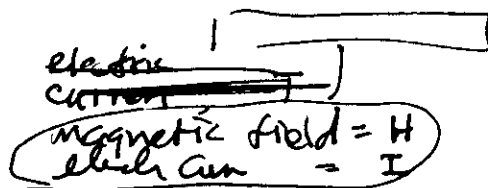
A request to the Khanate for information on their social and economic objectives should be included.

8.0 Maxwell's Equations.

8.1 Classroom derivation of Maxwell's equations in lecture in 1937 at University of California, Berkeley, California

The professor put Ampere's Law and Faraday's Law on the blackboard:

Ampere's Law:



$$H = f(I) \quad \text{--- (1)}$$

Faraday's Law: For moving wire in magnetic field

$$I = g(H) \quad \text{--- (2)}$$



Then he combined eqns (1) and (2) to get (3):

$$H = f(g(H)) \quad \text{---(3)}$$

Then he took the derivative of (3) and set it to zero:

$$\frac{dH}{dt} = \frac{df}{dt}(g(H)) = 0 \quad \text{---(4)}$$

He then factored out the ~~terms~~ separate terms in (4) getting three roots:

Root #1, when eqns (1) and (2) were used to simplify formulae, which when converted to vector form by Heaviside became:

[From 1st root]  $B = \text{curl } A \quad (5) \quad \text{div } B = 0 \quad (6)$

$C = \text{curl } H \quad (7) \quad \text{div } D = \rho \quad (8)$

The second root was:  $C = 0 \quad (9)$

The third root was  $C = \sqrt{\frac{0}{-1}} \quad (10)$

The professor threw out eqns (9) and (10) as being spurious roots of no real significance in nature. I complained to the professor that his throwing out the two "spurious roots" weakened my faith in mathematics and science, but needed that the spurious roots were of no significance. ~~So~~ I accepted the prof's explanation, but intermittently re-examined the problem.

8.2 While working at IBM Research in 1964 I studied Alven's "Cosmic Electrodynamics" and wrote a proposal to investigate the possibility that the second root might relate to a spiral core of Alven's magnetic-hydrodynamic waves. The senior scientist at IBM advised me that my proposal was

wrong.

8.3 In 1993 I took another look at the problem and modified a 3-dimensional cube diagram to assist me in resuming the search. I revised an older 3-dimensional diagram by adding a layer for "etheric information" on the top of the skyscraper and a layer underneath for "etheric energy." I found that computer searches in scientific data bases didn't help much. Then I made visits to "metaphysical" book stores and libraries and found some of Tesla's work. With the development of web pages on the Internet I started picking up references to areas of knowledge peripheral to my field of science and engineering. In 1996 I found that Lt. Col. (Retired) Thomas Bearden had already identified the second root as leading to "scalar electromagnetic waves" which are the same as the "longitudinal waves" experimented upon by Tesla in the 1890's.

8.4 In 1996 I found that Bearden's work <sup>[earlier than D2(2)Y]</sup> was cited by Woodhouse, "The Paradigm Wars" [B6X] in Fig 3. In 1997 I found the Valdman Valerium identified all three roots of the differential equations for electromagnetic waves [E2Y, 1992], but does not supply adequate documentation of his sources for me.

9.0 Protocol for transmission of this document to world.

It is proposed that since Brezhnev, Phucien, Gorbachev, and Gorbachev have mentioned new weapons of mass destruction that

their scientists were developing, and each called for a UN committee on control of new weapons of mass destruction, that we send copies of this paper and supplement within a ten minute period on a release date to be selected by officers of ISSS:

Time: 0 minutes = Put on web site ~~and~~ ~~Russia~~ ~~Twitter~~ West DC.  
3 minutes. FAX to Embassy of Gorbachev, President of San Francisco, California. WFLD  
6 minutes FAX and/or e-mail to President Clinton, USA.  
9 minutes FAX and/or e-mail to President Yeltsin, Russian Confederation, Moscow.  
12 minutes Russian Embassy, Washington DC.  
15 minutes FBI, USA  
18 minutes Newspapers,

For Pres. Clinton include a cover letter ~~with~~ urging the US to urge a UN conference to discuss ~~and~~ controlling new weapons of mass destruction.