

Institute for Christian Teaching
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**TECHNOLOGIES AND SOCIETY:
A CHRISTIAN REFLECTION**

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Prepared for the
31st International Seminar on Integration of Faith and Learning
held at
Friedensau Adventist University, Germany
July, 2003

Introduction

Mahatma Gandhi has said that

a technological society had two choices. First, that it could wait until catastrophic failures expose systemic deficiencies, distortions, and self-deceptions. Second, a culture could provide social checks and balances to correct for systemic distortions prior to catastrophic failures.

Just as the contemporary society needs strict definition and direction of the technological progress, religious people also need understanding of the new technology role in society, including the positive and negative sides of technology itself.

Obviously the methodology of such an analysis demands a certain framework. For the author of this essay, a Christian framework grounded on the Bible is the presupposition of drawing conclusions. Reflecting the Christian ideals, this essay intends to elucidate some aspects of technological progress and its impact on social life. This paper offers observations and insights on integrating faith into learning in the case of technology studies that will be relevant to appropriate classes as well as to disciplines based on using technology products or design in their contexts.

Statement of objective. The relations between society and technology have been discussed since the wheel appeared, but especially after an explosive growth of scientific discoveries in the 19th-20th centuries. Today, sharp debates are emerging about the positive and negative consequences of applying new technologies in scientific and public circles and the formations of techno-societal lifestyles.

The foundations of technology can be considered in several dimensions that encompass rules and processes of the created meanings we associate with technology. These meanings are metaphysical, theological (or spiritual), and secular. Such authors as Lewis Mumford, Jacques Ellul, Roderick Seidenberg, Gilbert Simondon, Lyucks Marc, Monsma S., Mitcham C. and Siegfried Gideon, not to mention M. Heidegger and H. Marcuse, have closely examined the nature and impact of technology on society and human beings. Many of them engaged in controversy over the harms and benefits of technology.

Some of the latest modern world-famous achievements in technology (cloning, gene engineering, nuclear power, virtual informational technology, and so on) have caused intense public discussions about ethics and morality in applications of knowledge and science to human life. Christians as a social group (or social movement) cannot separate from that; as they are producers, workers and consumers in many industries where new technologies and techniques are developed and used.

How must we operate as Christians when producing and applying new technologies and techniques? Does Christian faith deny any positive results of scientific progress, especially since many of them are double-edged and even dangerous and threatening for the spiritual and physical sides of life? If technology is in keeping with God's normative will, what is our responsibility as we produce and apply it?

The foregoing questions have some answers. Special attention to these questions is important, because teachers face the challenges of scientific progress every day and must highlight them to students, as much as they will be become creators and consumers of technologies.

The purpose of this work is not to create a new vision, but to help to understand different meanings of the technology products through which people conduct life. It is also to remind us of the origins of human beings created in the image of God and for His glory, and the responsibility to protect and save the natural environment as well as the cultures of our world's people. By being aware of different concepts and viewpoints, Christian educators, including Adventists, will be able to choose the proper and clear *spiritual estimation and application of technologies on the basis of Holy Scripture*. At the same time a variety of pedagogical methods or approaches can be used to show how to integrate Christian beliefs into the contexts of contemporary technology-induced changes in the world.

Vision of the relationship between technology and society

The influential role of technology permits identification of at least three types of human culture – traditional, modern and postmodern, in which the deep transformation of social institutions is associated with putting scientific knowledge and technological processes into operation.

What was behind the intent to apply practical knowledge to social life and make it usable by everyone in society? It demands a historical perspective to explain how the conduct of life can be driven by technological practices and products. Through a stubbornly paradoxical and polar formulation one can conclude that:

*Technology is our hope if we can accept it as our enemy;
as our friend it will destroy us [6].*

We are alerted by this view that if we look to technology for the solution to our problems, we may only invite the destruction of everything worth saving. If, on the other hand, we oppose technology with what is not machine-like in ourselves, what can understand the world instead of merely manipulating it. Then we will receive from technology the gift of our highest selves.

Technology can be used to enhance life in many ways. It can be productive and service-oriented. We know how much new medicine, new genetics; new biology etc. can do for saving people's lives and protecting them from diseases. It is clear that any powerful tool has potential for enhancing or destroying our society because the development of society is strongly linked with technique and technology. There are global-level dangers as well.

Technology products are creating an environment beyond the natural and social ones. What do we know about this "artificial nature" or "second nature," as it is called? The philosophy of technology is closely linked with social philosophy and theology. Information and technology are both achievements of human intelligence and constitute factors that change spirituality on the individual and social levels. They impact our ways of living and thinking. For example, because of technology, society is becoming informational in the every sphere of human activity and being

reformulated at the local and global levels. The sources of on-going alterations lie in the ability of human beings to make knowledge and to be intellectual and creative decision makers. For instance, information technologies are now becoming the foundation for a new cycle of civilized and planetary growth (global economics, global politics, global trade, etc.).

Strategic visions for significant changes in our future world are concerned with diverse technologies – social, political, economical, informational, and so on. Evidence for the technologization of social life is found in the report in the *New York Times* [9 October 1996], which chronicles the drop in foreign language majors from 1990 to 1995. Latin declined by eight percent, Italian by twelve, French by twenty-five, and German by twenty-eight percent. Philosophy, English, and religious studies also have steadily declined since the 1970s.

About definitions.

Let's go back to the genesis of technology. Two major terms we need to understand are technique and technology. "Technique," from Aristotle, was associated with theory (*theoria*), practice (*praxia*), and creation (*poiesis*). After the passage of centuries technology became a separately functioning sphere. The interaction between human beings and technology and society and technology are fields where man's ability to create is applied, and where knowledge is put into practice. It was written about the role of the tool in human history, that when tools appeared, they served man's needs. Does man now serve the needs of technology?

Briefly, "technique" means any method used to accomplish something in any specific field, or "the method of procedure (with reference to practical or formal details) in rendering an artistic work or carrying out a scientific or mechanical operation"[9, p.1872]. In sense, technology is the branch of knowledge that deals with applied science, engineering, and the industrial arts. Another meaning is the application of knowledge for practical results. So, knowledge and practice, our work areas, can help us to go deeper into the relationship between technology and society.

Ellul, another philosopher and theologian, defined technique as "the totality of methods *rationality* (*N.B.*) arrived at and having absolute *efficiency* (*N.B.*) (for a given stage of

development) in every field of human activity" [1, p. xxv]. This definition is based on the main characteristics of technique that serve to generate efficiency - rationality, artificiality, automatism of technical choices, self-augmentation, monism, universalism, and autonomy. That is close to what Steve Talbott writes about technology; that it consists of the machinery embodying our one-sidedly abstract habits of mind [6].

Let's sum up what can be determined about all definitions of technology from different content perspectives (done by Monsma and described by Roland van Oostveen) [11]. Each is grounded certain approaches:

1. *The anthropological* - technology as an activity that humans carry out ("the area of interaction between ourselves and our environment").
2. *The epistemological* - technology as a body of systematized practical knowledge, enhancing the capacity of society to produce goods and services.
3. *The sociological* - values, attitudes, processes and outcomes that result in society and associate technology with the basic structures of society.
4. *The alternative view* by Monsma - ("cultural-contexted" *N.B.*) - technology as an activity that is performed by humans in the context of a culture in response to God, to exercise responsibility by forming and transforming the natural creation, with the aid of tools and procedures, for practical ends or purposes¹.

Relationship between technology and society.

In Greek culture science and "technique" were distinguished. Science was immersing oneself in and listening to nature. A true knowledge of nature was to be found in searching for the truth in nature, but experimenting with nature was considered an obstacle in finding out the truth. "Knowledge for the sake of knowledge" was the highest value and the highest form of human activity, because it brought humans closer to God, who knows all things. But later F.Bacon applied experimental knowledge to practical life. This was the opposite of Aristotle's understanding of science. Aristotle believed that the best science was the least useful. Bacon founded a new social meaning of scientific and technological progress: knowledge as a productive power, with nature as a working place for the technician.

Through the centuries knowledge was becoming depersonalized. But should technology and knowledge be morally responsible? If technology is ethically neutral, are its creators not to be

¹ - *We should say that the last one is mostly based on religious, even Christian, worldviews*

held accountable? Leonardo de Vinci refused to publish his invention of underwater machinery because of the evil nature of man, suggesting that not everything science and technique can offer to us should be produced and applied.

Certainly, technology, society and the nature are major interlacing forces. One of the most thoughtful philosophers, Jacques Ellul, points out the threat to human freedom and Christian faith created by modern technology. Moreover, technique and technology create an artificial system, which can subordinate or even eliminate the natural world. Might technology someday destroy humanity?

As Russo writes [2], the strong force of technology is to be understood not as this or that machine, or this or that branch of machinery, but as the entire organized and interdependent ensemble dictating the technicization of everyday life, from politics, economics, and bureaucratic administration to the media, advertising, fast food, transportation, and tourism. It seems we attempt to humanize technology by using such words as user-friendly, communication benefits, and so on. Face-to-face contact has been somewhat replaced, and we must also say enhanced, by face-to-machine contact. So goes the technosocialization of life.

Of course, some observers approve the positive side of practical technique and knowledge. The first group of people, the instrumentalists, believe that technologies are tools that lie ready for as though in a toolbox, and that such tools constitute neutral or value-free means to chosen ends. Typically, instrumentalists speak of technologies rather than technology. For them, technology is indifferent to politics, and “a car is a car and a computer is a computer in any social or political context, and top-down management, bureaucratic expertise, and quality-control are the same everywhere” [2]. In the instrumentalist view, technology differs from law and religion.

By contrast, the second group, the substantivists (for example, Ellul and Mumford), opposes the view that technology is a phenomenon greater than the sum of its parts and is the result of the loss of human nature. Ellul's claims technological tyranny over humanity: far from being neutral, technology has become the *substance* informing more and more of life, like an implacable centralized bureaucracy that directs decisions at every turn. Thus, choosing technology entails

"unwitting cultural choices." Instrumentalists might defend fast food as the most efficient way of getting calories, saving time, and avoiding social complexities; substantivists would recall the ritualistic aspects of the dinner hour, lament the breakdown of the family, and denounce the coarsening of taste"[2].

In the Ellul definition modern technology impacts society through efficient techniques and the defining force of a new social order imposed on all human activity. He fears that using techniques and technologies has only one principle - "efficient ordering." According to Ellul, technology is "progressively effacing the two previous environments" - nature and society. Instead of technology being subservient to humanity, "human beings have to adapt to it and accept total change" [1, p. 136].

For Ellul this misplaced emphasis is one of the problems with modern education. This is why there is such an incredible stress on information in our primary and secondary schools and higher education institutions.

And now we use technology to eliminate the consequences of technology use. With more and more information we have less orientation and certainty. The completeness and coherence of facts is not possible in any final way. "The technological system can gather and process information, can organize and control the planet, all more efficiently than anything hitherto; it cannot establish a humane standard of evaluation, or provide a symbolism other than a desiccated, flattened imagery, for the most part parasitic on the culture it replaces" [2].

Looking over current standpoints we can identify two positions: 1. technology is neutral; 2. technology is value-laden and ethics-based. We must decide "which human and material resources are needed to make us technology and what knowledge or skills are important for that purpose" [10]).

Human's practical activity in religious and societal context

Traditional society. Traditional culture was associated with the principle of being a part of natural processes in the construction of social life (state, economics, so on), in contrast to the idea of active intervention and transformation of natural and social processes. Traditional

cultures basically never promoted transformation of the world or established authority of the person above nature. There was one Truth revealed about the world – including nature, human beings, heaven, the Universe and supernatural God or gods) given to people by a God. The sacredness of societal life flowing through the government of the Supernatural was also fundamental.

By looking at the dominant values of technological cultures, we see that they understand nature to be an inorganic world, an object, providing material resources for human activity. It was assumed that these resources were boundless; therefore man could exploit them on a growing scale. In contrast to this assumption there is an understanding of nature as a living organism, held by traditionalists who believe that human beings are a small part of a holistic environment.

Eastern traditional systems² of values consider the person to be included in the organism of nature, as though dissolved in her. The vector of human activity is focused not so much towards the outside, but rather inside, on self-education, self-restriction, and inclusion in tradition.

Generally, *their response to technology will be “no” –to stop technologizing the universe; to involve ourselves in Universal movement and order.*

Modern society. Approximately, the technological civilization was born in the European region in the 14th-16th centuries. It was preceded by a mutation of two traditional cultures: the Hellenistic civilization and the European Christian Middle Ages. The grandiose synthesis of their achievements in the Renaissance epoch and Enlightenment has generated a core system of values on which civilization with a practical knowledge base was born. The fundamental process of its development became technical-technological progress. Knowledge was equated with power.

The system of values and vital meanings, which is directed to technological development, included a special understanding of the person and her place in the world. First of all it represented the person as an active being who was divinely doomed, and understood man's activities as transformations organically connected to this understanding.

² - We consider countries of Asia as main representative of the Eastern world

In this system and world outlook of technological western culture, the person is examined as a resistance to nature; the vector of her activity is directed outside, toward alterations of the world. The person is viewed as an involved being, an essence which resists nature and whose activity consists in transformations of nature and rejection of her authority. Scientific knowledge and principles about organic, inorganic, social worlds were applied in such ways to change the forms of their being into the most efficient and useful ones.

The best aspects of modernity, such as technology, democracy and women's promotion, don't seem currently attractive for people in Islam and some parts of Asia. Luycks Marc called this process "demodernization". On the other hand, modernity is linked with dehumanization: things become modern and lose a sense of humanity. The side effects of technological development are ecological crisis, anthropological crisis, estrangement, invention of new means of mass destruction etc.

Technological applications in the sphere of everyday life, which were called "progress", changed social communication, human relations and social institutions. At the same time, religion as a source of human knowledge of the world had been relegated to the "private" sphere. Truth had become only what could be rationalized and proved by the scientific method and knowledge. This was a step toward secular society. Still, thanks to new inventions and the industrial revolution we have more comfortable and convenient lives.

Postmodern society (or transmodern). According to leaders of postmodern paradigm the new comforts seemed to offer the best of modernity without its defects. If a postmodern way of thinking is emerging, it should be a creative mix of rationality, mystics and intuitive brainwork, coupled with the realization that scientific discoveries and technological innovation have made human beings the real shapers of the future. Innovations and technologies can take us efficiently to wherever humankind is going.

Some characteristics of this paradigm mentioned often last time are: a view of nature as sacred and worthy of reverence, and of humans as a natural part of the Earth; a cosmic perspective; a high quality of scientific researches; a change from human-concentrated to Earth-concentrated

values; and others. The society of the late industrial and early post-industrial age is profoundly influenced by a scientific and technological mindset that correlates with achievements of modern science and opportunities to use knowledge for practical ends. This is also seen in the wide-scale application of technology to social, political, and business problems. Moreover, people seem to trust technology for solutions to growing problems. Some feel they just need to build a machine. But nowadays, trust in technicians is declining?

A postmodern society should be understood in terms of the *users* of technology. But at the same time there are experts in society who are seeking to optimize work. The term “hi-tech” is the social indicator wherein technology has a dominant role in economic structure and productivity. In such a society it may become difficult for citizens to function without substantial background knowledge in technology, perhaps over against interpersonal skills.

A separate type of society based and developed because of technology’s role was called **technological society**. The domination of innovations and scientific progress produces a burgeoning of goods and services, which is not the case in traditional societies.

Positive results for the individual and society are thought to be caused by understanding laws of change in technological culture. Such an understanding is organically linked with the values and priorities of science, which provides knowledge of these laws. Scientific rationality in this type of culture dominates the system of human knowledge, actively influencing all its other forms.

Positive and negative results of technologization. The technological civilization has brought mankind to certain achievements. Scientific-technological progress and economic growth have resulted in a new quality of life, enabled growth in consumer spending, and increased average life expectancy. The majority of people believe that this civilization will progress toward a better future. But a half century ago there were only a few who expected that technological civilization would result in global crises, some of which may threaten the continuity of civilization. The ecological crisis, the anthropological crisis, increasing alienation, the invention all new means of mass destruction, the looming threats to all mankind - all these are by-products of technological development.

Technology has brought many great benefits to society but also unexpected risks and side effects, unintended social consequences, and changes in our moral outlook. Many government programs provide diverse technical and financial assistance to farmers and ranchers facing very serious threats to their soil, water, and other natural resources, including grazing lands, wetlands, and wildlife habitats. The alleged value of transforming creative activity is inherent only in techno-technological civilization, not in traditional cultures.

New world is designed by technology

The question of all questions is whether the human family will build upon a global perspective and a history of successful communication and cooperation to create a positive future. But we are on the path to unknown future. The Internet and other technologies redefine the way we relate to one another while offering the potential to completely refigure the structure of civilization.

The values of this newborn world are in a transition that can be divided into:

- Trust in science and technology to solve problems that lead to loss of meaning, or
- A growing interest in discovering personal meaning and purpose in life.

Why have these interests surfacing now? Because of the harm to humanity done by the technology and machinery of modern civilization? These controversial trends are indicated in the new paradigm of information, knowledge, and innovation societies. *Using man as a measure, a new type of integration of truth and morality, goal-rationalized and value-rationalized action is emerging in the strategies of complicated social systems where the main components are ethics and knowledge.* Two ways to investigate society and nature are intervention-transformation and observation-adaptation. Which is preferable?

Something about Christian background. Reasoning from the new attitude to nature, the majority of researchers and the intellectuals assert a new idea of ethics, referring to the experience of traditional eastern cultures and the careful attitude towards nature that is peculiar to traditional societies. But for Christians, all of the above is the foundation that has appeared in

the first verses in the Bible. Our attitude to nature is, in the main, not reduced to mere contemplation of and adaptation to it. The person will still alter nature, but in which way?

Let's read some verses,

1 Corinthians 13:8-10 "...But if there are prophecies, they will be set aside; if there are tongues, they will cease; **if there is knowledge, it will be set aside** (N.B.). For we know in part, and we prophesy in part, when what is perfect comes, the partial will be set aside"

Proverb 2:6 "For the Lord gives wisdom, and from his mouth comes knowledge and understanding (N.B.)»

Ecclesiastes 1:13 "I applied myself to use my wisdom to thoroughly examine everything that has been accomplished on the earth (N.B.)"

The 10 Commandments in the beginning point us to two principles, which must be dominant in our attitudes towards nature and human beings – not to do harm, but to do good. In spite of this primary mandate it is often difficult to apply moral or ethical standards evaluating the risks and benefits of new technologies in modern contexts.

What should we evaluate from the Christian perspective - results, purposes, process itself, technology practitioners, or all of these?

1. *Whereas technology is the attempt of human beings to create their home in this world, the Bible denies that they are truly at home here. Should this thesis lead us back to making fire by hand from flint stones?*
2. *God gives freedom to human beings, allowing them to create artificial things and apply knowledge because of the creative abilities provided by Him?*

The basis for a Bible-based approach derives from the fact that man was created in His image according to His likeness, and blessed with the mandate to subdue the earth (Genesis 1-3). "It is the Biblical view of nature that gives nature a value *in* itself... because God made it... Man can exercise dominion over nature without being destructive" [Schaeffer 1970]

Therefore behavior, patterns and attitudes toward using technologies should be understood and appreciated not only as resulting from different cultural norms and values but on a biblical basis.

The ability to create social and material reality is grounded on a vision of the creative power given by God to man. Let's review two examples:

Exodus 31:1-5 "Then the LORD said to Moses, "See, I have chosen Bezalel son of Uri, the son of Hur, of the tribe of Judah, and I have filled him with the Spirit of God (N.B.), with skill, ability and knowledge in all kinds of crafts- to make artistic designs for work in gold, silver and bronze, to cut and set stones, to work in wood, and to engage in all kinds of craftsmanship".

Exodus 32:1-4 "When the people saw that Moses was so long in coming down from the mountain, they gathered around Aaron and said, "Come, make us gods who will go before us. As for this fellow Moses who brought us up out of Egypt, we don't know what has happened to him." Aaron answered them, "Take off the gold earrings that your wives, your sons and your daughters are wearing, and bring them to me." So all the people took off their earrings and brought them to Aaron. He took what they handed him and made it into an idol cast in the shape of a calf, fashioning it with a tool. Then they said, "These are your gods, O Israel, who brought you up out of Egypt"

So the true guide for us is the Holy Spirit, not man's willingness or weakness. One modern philosopher wrote that we need to make the web of technological decision-making a part of the movement toward the shalom of Christ's' kingdom [7]. Therefore, Christians should approach technology with self-sacrifice and not for self-service (see for instance, **Luke 3:11, 2 Corinthians 9:11**). Can this issue really be resolved?

Next question is, in what measure have the interests of the individual, of nature and of society been taken into account in new technological developments? In the modern world, progressive technologies play a key role as the "engines" of economic growth. This is achieved by applying new technologies in business, education, science, mathematics, programming, biotechnologies, and even religion itself.

Job 28:1-13, 23 "There is a mine for silver and a place where gold is refined. Iron is taken from the earth, and copper is smelted from ore. Man puts an end to the darkness; he searches the farthest recesses for ore in the blackest darkness. Far from where people dwell he cuts a shaft, in places forgotten by the foot of man; far from men he dangles and sways. The earth, from which food comes, is transformed below as by fire; sapphires come from its rocks, and its dust contains nuggets of gold. No bird of prey knows that hidden path; no falcon's eye has seen it. Proud beasts do not set foot on it, and no lion prowls there. Man's hand assaults the flinty rock and lays bare the roots of the mountains. He tunnels through the rock; his eyes see all its treasures. He searches the sources of the rivers and brings hidden things to light"

Where can wisdom be found? And where does understanding dwell? The answers were given to us from God Himself, that “*Man does not comprehend its worth; it cannot be found in the land of the living*” (see more, for instance, in **Jeremiah 33:2-3; Proverbs 2:2-5; 8:29-30; Ecclesiastes 2:3-9**). But humans have always tried to leave their mark, make a name for them, and put themselves in God's place:

"Come let us make bricks and burn them thoroughly." And they had brick for stone and bitumen for mortar. Then they said, "Come let us build ourselves a city, and a tower with its top in the heavens, and let us make a name for ourselves..." (Genesis 11)

Technology promotes both. So, in doing and applying technologies those Christian are to act as servants – to love and to care all God’s creations. This is both our duty and our strategy.

Applying knowledge about technology in the learning experience

The role of technology in education is increasing in modern society. What we knew and discovered thanks to empirical data decades ago has become more much today. Machines and techniques help us study mathematics, science, and technology through applications in everyday situations (work places, households, travel modes, communications, etc.). And the reverse is true.

Doubtless, technology is helping people make well-based decisions, use appropriate tools, and solve sophisticated problems in very different sectors of society. Full-time students and partakers of services from technology institutes have good knowledge about new technologies and practices.

Generally speaking, looking at the integration of technology courses into curriculums and its contents into humanities subjects, which are traditionally society-focused and value-oriented, we can notice a shift from human-centered to technology-centered course designs. Of course, new innovation courses are appearing with technology at their cores.

What can we Christians suggest in this case, sharing a certainty about God’s processes in the nature of earth and social life, while we are mandated to investigate knowledge about the world?

There are two general directions of learning experience we need to use for integrating learning and beliefs (faith). *The first one* concerns students' study and reflections on different topics while studying, and *the second is* teachers' responsibility for the design of the content of education itself. *Firstly*, students used to come to universities or colleges having previous learning experience (observations and practiced knowledge taken from families, friends, and school teachers, and so on). They could repeat or replicate their basic knowledge, or convert it into another paradigm because of their ability to reflect. The quality of their reflection is the prerequisite of further successful learning while taken new more complex courses in the curricula.

Secondly, because educators put certain concepts into students' minds, they are responsible for recipients who are passive in the beginning stage of studying. The common task for teachers is to prepare students' minds to combine theoretical concepts with practical experienced-based knowledge, and assess the *results* of that.

Students can become decisions makers to produce technologies based upon Christian values and principles (*purposes*), and at the same time be ready to share responsibility for the future applications of technologies (*results*). The strategies for teaching Christian values in the case of technology and relevant disciplines may include helping students to make judgments *to use selected technologies or not (machinery, biotech, artificial intelligence, new life forms, etc.)*. For this they will require refined models and case studies that are close to real life situations [*see, 8*]. Teachers can help students explore and discuss the philosophical, spiritual, and social or other challenges of any kind of technology in relation to several issues viewed from holistic perspectives. In this manner we will combine different aspects of technology and construct what is sometimes called the "big picture."

Some **learning objectives** should be imbedded into the curriculum of contemporary education grounded in the spiritual dimension:

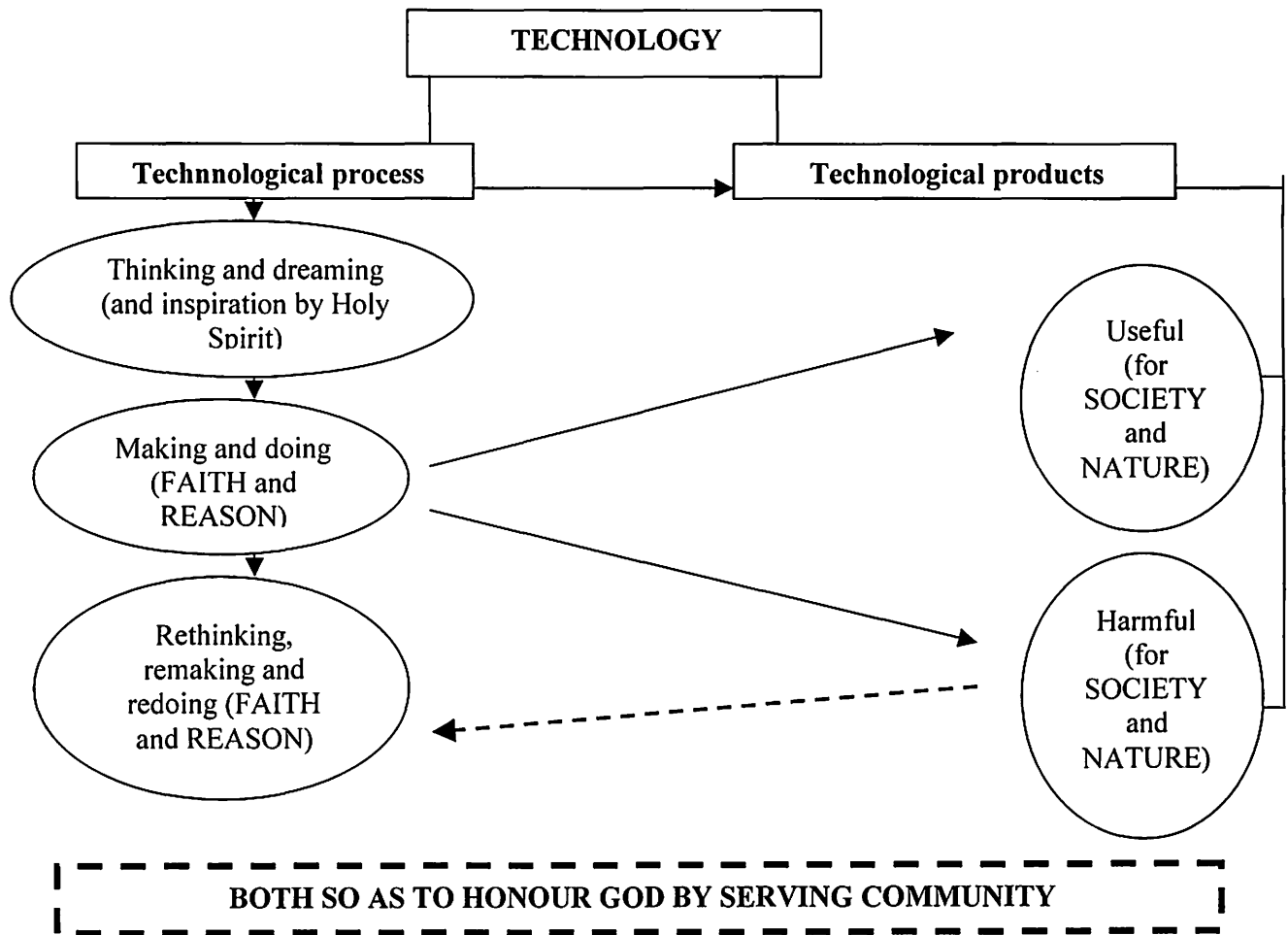
- To make students be information seekers and *evaluators of their own learning experience*;

- To make students be *critical* thinkers, analyzers, and selectors of information and technologies appropriate to the Divine task (*Genesis 1:28*);
- To make students discover new knowledge based upon information resources and technology *for the glory of God*;
- To make students be effective consumers of technologies/media (*for instance, in evangelism*);
- To make students be users of technologies which *don't harm nature and people* in work situations and beyond them;
- To make students be *responsible citizens* of both kingdoms – earth while living and in heaven.

All the above-mentioned includes understanding the ethical, cultural, environmental, and social implications of technology and telecommunications; developing a sense of stewardship and individual responsibility regarding personal uses; respecting historical contexts and enhancing cultural lineages with integrity and concern for the truth; and comparing all of this with revealed knowledge about heaven.

Here are some scientific and technical programs or tasks of the near future which are supported by leading scientific centers: progressive telecommunication and information technologies; health of the individual; genetics; biocomputer sciences; biotechnologies, new materials; engineering of management and business; technologies of safety and protection; confidential information; harmless, « pure » technologies; and sociocultural technologies. Educators could discover concrete applications for their professional skills and pedagogical approaches from the list above; integrate the Bible's principles (*see below*) in the content of technology courses; create curricula according to the needs of society; and be responsible to the epoch in which they live.

Technology itself can be viewed and represented to students by this way³:



A Christian approach to technology issues in Adventist education:

Main principles:

- Testing the purposes of technology using both reason and beliefs;
- Testing the results of technology using both reason and beliefs

Main values:

- ✓ To glory God in nature and faith;
- ✓ Respect for the physical and social environment and human beings;
- ✓ To value the physical and social environment and human beings;
- ✓ Abstaining from any kind of harm for “nature-human being-society”;
- ✓ Supporting for any kind of benefit for “nature-human being-society”;
- ✓ Responsibility for everything recommended to application in material and social world.

Conclusions

The foregoing is only an attempt to clarify education issues associated with the increasing role of technology in contemporary society. Whatever paradigm we operate within, including

³ - Author’s scheme is based on <http://www.ndcs.nsw.edu.au/TASWorkshop/Continuum.htm#Better1>

intellectual models (“modernity,” “postmodernity” or “traditionalism”) cultural relativism and moral absolutes cause tension in understanding the place of technology in society.

Relationships between technology and social life, including the purposes and consequences of creative activity, require spiritual and ethical perspectives. Although some may not admit that the use of machines changes the way people think, it nevertheless seems to be the case. Technology can be connected with forms of human practice, and is therefore not ethically neutral.

Examples of this are significant implications of innovative courses in the education systems of many countries, as well as alterations in the production of new types of workers who are more creative and responsible for decisions they make. New expectations have addressed the societal impacts of engineering decisions, as reflected by the Accreditation Board of Engineering and Technology:

Engineering programs must demonstrate that their graduates have the broad education necessary to understand the impact of engineering solutions in a global and societal context. (ABET Criteria 2000)⁴

At the core we are interested in how technology is affecting our lives and the issues this raises. It is obvious that scientific progress is not always beneficial. There can be a tension between efficiency and utility on the one hand (for sake of economical growth) and social and human dimensions on the other (for sake of nurturing human beings). Scientists and engineers are called to conduct their work and to make decisions based not only on ethics but also spiritual implications (*guided by the Holy Spirit*).

The skills and services of human beings should help to subdue the earth according to God’s likeness. One should apply knowledge or transfer knowledge for problem-solving purposes only after considering the possible consequences for both nature and humankind. Because of the dual nature of the world – good and evil – human beings can reject the existing order and set about to

⁴ - www.spu.edu/~mplett/Thoughts%20on%20responsible%20technology.doc

change it and shape technology to serve the needs of humankind. This is a call to live responsibly in an increasingly technological world.

E. White warns [5], that in a pursuit of knowledge and technologies the human soul is threatened with *mercenary, terrestrial purposes and dangers*. Unconsecrated people can become instruments in the hands of malicious forces to harm mankind: in medicine, biology, economics and so on. Such people may not care how and for what they use their achievements and what the prolonged results of their applications might be.

A Christian approach to technology can be viewed as a synthesis of two opposite vectors (observation and intervention), correlated in biblical interdependence; also, a synthesis of the achievements of modern technological cultures and certain features of traditional cultures, which are finding a new voice today through God's will. Specifically, there can be a transformation of current technological processes, in particular design criteria and the values considered in decision-making.

We should not forget about the creative power, which is given to the human beings by God to use His true purposes. Yes, there are mystical persons who renounce the material world, and materialists who dismiss the spiritual world. Yet they end up sharing the same hope – to survive on the Earth. Because technology is rampant all over the world and part of humans' life, it is impossible to evaluate it without a worldwide perspective. There are even some scenarios about what can save the world – ranging from the beauty to asceticism. By contrast, religious people should engage their lives in responsible daily conversation with the spiritual and physical worlds despite the occasional attractiveness of a wholly technological paradigm.

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