

Home Economics

**FORUM**

## **TECHNOLOGY**

*Family and Technology: Educating for the 1990's  
and Beyond*

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*Kappa Omicron Phi/Omicron Nu Letter to  
Members*

*Consolidation Questionnaire*



# Kappa Omicron Phi Omicron Nu

P.O. Box 247  
Haslett, MI 48840-0247  
April 20, 1987

Dear Member:

The Kappa Omicron Phi/Omicron Nu Administrative Merger became a reality on October 1, 1986. To plan for this merger the national officers of both honor societies held a Strategic Planning Workshop in June prior to the AHEA Annual Meeting. It became apparent during the sessions that there was a unique commonality of long term goals, purposes, and standards of excellence. Your Kappa Omicron Phi and Omicron Nu leaders determined that further cooperation provided significant opportunities and benefits for members and the profession.

Subsequently, both administrative bodies authorized the development of a Plan for Consolidation. Phi Upsilon Omicron has been invited to consider consolidation and join the discussion. In legal terminology consolidation is defined as the fusion of two organizations and the formation of a new entity. This bold decision was based on strategic planning that provided the opportunity to anticipate the future and make choices for action based on values and needs. The consolidator of Kappa Omicron Phi and Omicron Nu offers:

#### Opportunities and Benefits

- One voice in advocacy for scholarship, leadership and research.
- More substantive contribution to academia and the profession.
- Unity and clarity of purpose in quest for excellence.
- Innovative and enhanced services.
- Broader scholarly community for critical dialogue.
- Conservation of financial resources.
- Avoidance of duplication of effort.

Consolidation of Kappa Omicron Phi and Omicron Nu will assure that

- Existing chapters will constitute the charter chapters.
- All members will become charter members.
- The purposes will focus on scholarship, leadership, and research at the undergraduate and graduate levels.
- Each chapter will be represented at national conclave.
- Continuing opportunities for participation by student, faculty, and alumni members will be provided.
- A scholarly journal will be published.
- Appropriate honor society standards will be maintained.
- A national network will be maintained.
- Programming will continue to benefit the profession and the general welfare of society.
- Excellence will be perpetuated.
- Fellowship and scholarship opportunities will continue at the current level or higher.
- National support of local chapters will continue.
- Fiscal solvency and accountability will continue.

Input from the membership is important in the conceptual development of consolidation. The following opportunities were planned to facilitate this process:

- Administrators Conference, February 20, 1987
- Kappa Omicron Phi/Omicron Nu Consolidation Questionnaire
- 1987 Omicron Nu Conclave Forums, June 25-28, 1987
- AHEA Open Forum, June 30, 1987
- Fall 1987 Kappa Omicron Phi Regional Meetings
- Task forces to study consolidation issues, Fall 1987

This letter and the enclosed questionnaire cannot address each issue or answer all the questions about

consolidation. We hope you will use the meetings and the questionnaire to contribute your ideas. We intend to carry out our elected role of leadership, but we sincerely ask for your insights and support in establishing this new direction for a relevant and productive era for Kappa Omicron Phi and Omicron Nu.

Sincerely yours,

Virginia Moxley  
Omicron Nu President  
Gwen C. Cooke  
Omicron Nu President-Elect  
Norma S. Bobbitt  
Omicron Nu Vice President  
Sharon A. Wallace  
Omicron Nu Treasurer  
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Joanne Beyers  
Kappa Omicron Phi Student Rep

Technology can solve problems, but in the process new problems may be created. Therefore, skills for thinking about the consequences of technology are needed. For example, the technologies that support organ transplants have created ethical questions regarding donor and recipient decisions. Are individuals and families prepared to respond to these critical issues? Are there certain valued ends that ought to be identified before these decisions are made?

The application of science has been a part of Home Economics since its beginning. Ellen Richards used science to improve environmental quality, but the facts of science need to be combined with the careful study of values to ensure quality of life. We should ponder whether home economists have adequately applied qualitative as well as quantitative methods to study technology and its impact on individuals and families.

The articles in this issue address the topics of educating families about technology, growth of household technology, impact of technology on the family, financial services technology, and food irradiation. As we have discovered in the past few years the further we proceed toward the twenty-first century, the greater the complexity, the greater the risks, and the greater the dangers and problems to the environment and human society. We conclude that the knowledge and skills of home economists will become even more critical to surviving the future with a meaningful quality of life. Can we afford to ignore the challenges? Can we do any less than to increase our effectiveness in helping individuals and families to direct their own lives?

Connie Martin & Ruth Mears  
Guest Editors

This issue completes the first volume of *Home Economics FORUM*. Support for our efforts has been satisfying, and *FORUM* is on its way to becoming the scholarly journal envisioned by the officers of Kappa Omicron Phi and Omicron Nu. A goal of both organizations is to promote quality of writing within the profession. Gabriele Rico in her book, *Writing the Natural Way*, refers to revision as *less is more*. What an excellent motto for the writer! Revision has to do with eliminating extraneous material, sorting and selecting, honing and sharpening, and paring and polishing to an aesthetic whole.

Good writing requires rigorous attention to four tasks: grabbing the reader's attention in the introduction, writing a clear thesis statement, concisely summarizing the paper, and rewriting until the flow and transitions are smooth.

The next issues of *Home Economics FORUM* will focus on "Public Policy Involvement" and "Systemic Models for Home Economics Research and Application." Other topics currently under development relating to human needs and qualitative research will be announced in the next issue of this publication. The Fall 1988 issue will feature undergraduate manuscripts. Kappa Omicron Phi and Omicron Nu chapters will participate in programming to support this initiative.

Information about the topics and "Guidelines for Authors" can be obtained from the *Home Economics FORUM* office, P.O. Box 247, Haslett, MI 48840-0247 (517-339-3324).

Dorothy I. Mitsifer  
Editor

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## EDITORS' COMMENTS

This issue of *Home Economics FORUM* explores the impact of technology on the home and family. It should be noted that technology has been with us ever since humans have been able to systematically affect their environment. Broadly defined, technology is the application of scientific knowledge to practical purposes. A variety of issues related to technology are addressed in this publication, but we acknowledge that there are other important issues of concern to the profession.

Home economists professionals are enablers for families in decision making regarding technology and its impact on the family and the larger society. Thus it is our role to help families evaluate the uses of technology and examine pressures from the culture, media, industry, business, and science on their wants and needs for technology. We must keep in mind that people should be the decision makers; technology should not direct their lives.

# Family and Technology: Educating for the 1990's and Beyond

Laurie Hittman

**This article discusses the positive and negative influences of technology on the family and on society and explains how home economics educators can prepare students to be aware of these so that they can direct and shape change in the future. Included is a description of the "Conceptual Framework for Family and Technology Course," Wisconsin Home Economics Guide for Curriculum Planning.**

This article will explore two questions. First, what are some positive and negative influences of technology on the family and society? Second, what could Home Economics educators do to prepare students to become aware of the influence of technology on family and society so they can help direct and shape change in the future? In addressing these questions, it is assumed that the family is a powerful social institution which influences and is influenced by society. Acting as an individual unit or collectively, the family has the ability to participate in and direct change. It is also assumed that technology is a powerful social force that has influenced the family in both positive and negative ways. Technology has affected the family's construction of meanings, formation of values, and patterns of thinking.

## Significant Influences of Technology on the Family

Technology has had a profound effect on the way families live, think, feel, and perceive the world around them. It has contributed to an accelerated pace of life, increased mobility, an explosion of information, and significant changes in family life.

Arcus (1983) proclaimed that while technology is usually intended to benefit society, these benefits do not flow automatically. One common thread in technological change is that the impacts of such change have had positive and negative consequences. At the same time that we acknowledge the potential of technology for solving

pressing problems and improving the human condition, we express concern for the actual or perceived negative impacts of these same developments on the individual, family, and society.

Technology has had numerous effects on the family. For the purposes of this article, four significant influences of technology will be described: the technological mind set, meanings of quality of life, standardization, and meanings of work.

**Technological Mind Set** — Hatch (1984) said that technology has contributed to the development of a technological mind set or way of thinking. Characteristics of the technological mind set include addressing and solving problems based on expediency and efficiency, examining only parts of the problem, inadequately framing the problem, emphasizing methods or means, and reducing complex problems to technical/how-to problems. The overriding concern is doing something and not asking why.

Bell (1973) further stated that technology has created a new rationality, a new mode of thought which emphasizes functional relations and the quantitative. Its criteria for performance are those of efficiency. In other words, getting things done in the fastest and easiest way possible is most desirable.

A concern for efficiency, which undergirds the technological mind set, is not bad in itself. It can be appropriately used to solve material problems. It does become damaging, though, when it becomes the end goal for solving problems of human concern for at least two reasons. First, ends are not thoughtfully identified, critiqued, and justified; and second, long and short term consequences to persons and groups directly and indirectly involved are not considered. In other words, the use of the technological mind set limits the family's ability to address and solve complex issues.

Using the technological mind set to solve problems is a social force which pervades our lives. Evidences of its use to solve human problems are seen in a multitude of ways. For example, magazine articles on how to be a successful parent, how to reduce stress in 10 easy steps, how to lose

weight overnight, or how to have a happy marriage reflect this way of thinking. We are aware that reducing these complex issues to simple problems does not aid us in really solving the problems.

The family, through daily interactions, teaches various ways of thinking to its members. The technological mind set, as the predominant way of thinking practiced in the family, can hinder family members from maximizing their human potential.

**Meanings of Quality of Life** — Traditionally, Home Economics has been concerned with improving the quality of life for the family. However, there are multiple meanings that exist for what it means to improve the quality of life for the family.

In examining this idea more closely, technology has contributed to improving the quality for the family and the individual. For example, technology has (a) freed persons from the drudgery of hard physical labor; (b) increased the average life span more than two times as a result of new drugs, medical advances, and improved nutrition; and (c) enabled persons to overcome physical and mental handicaps.

On the other hand, Brown (1985) contended that technology has contributed to a materialistic orientation of how Americans tend to define quality of life. Technology is the basis for the industrial society. Technology made it possible for items to be mass produced. Mass production led to a need for mass consumption. The growth of mass media came along with the mass production of goods and services. Mass media, supported by advertising, stimulated the wants of people. Images of what is *normal* is depicted in the mass media. As a result, the combination of mass production, mass consumption, and mass media have contributed to quality of life being defined as having material possessions and money. People tend to be judged by the house they live in and the clothes they wear rather than by their human qualities. Orientations underlying this view of quality of life hold that more is better (i.e., having more material possessions is desirable), new is better (i.e., new cars, new clothes, new houses), and bigger

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Ms. Hittman is Northwest Home Economics Coordinator for Cooperative Educational Service Agencies (4,8,9,10,11,12) in Wisconsin and participant in a curriculum and staff development project of the Wisconsin Department of Public Instruction. The author wishes to acknowledge teachers participating in the development of the Family and Technology course: Pat Brodacki, Donna Davis, Sharon Gilles, Dawn Johnson, Sue Kruszenga, Kathy Krumrie, Marilyn Peplau, Betty Rhyner, Gail Sommerfeld, Chris Stratton, Marilyn Swiontek, Joanne Twidit.



is better (the bigger the home a family lives in the more desirable it is). This way of defining the quality of life has affected family interactions, lifestyles, and what we believe is desirable to achieve.

**Standardization** — Mass production of goods yields standardized products. Standardization, on one hand, lead to reduced prices, but it also contributed to the production of many items that are the same. The concept of standardization has influenced styles of dress, education, speech patterns, entertainment, food, and the entire industrial society. Standardization of goods may be desirable, but its transferability into relationships and daily family interactions is problematic.

Clark (1984) described how standardization, a concept basic to technology, has contributed to conformity — not only in what we wear, in what we eat, but in conformity of thought. Clark said,

Most of those who advance the human enterprise are originals. Originality is the basic feature of individuality. The uniformity of modern life is a dreadful challenge to individuality. We are uniformly dressed, entertained, and fed. We all watch the same appalling commercials for denture adhesives, deodorants, and instant coffee. Man: "I lost my job, the bank is foreclosing on us, and our son just ran off with the milkman." Woman: "I'll make some coffee."

This uniformity is epitomized for me by McDonalds where Ray Kroc made a fortune when he standardized the size of the hamburger, the size of the bun, and the trimming. Standardization of fast food is one thing; standardized food for thought is another. These days we get our McNews from McRather, the McPapers like *USA Today*, and McMagazines like *People* and *Us*. We read McBooks and watch McMovies. It's a Hell of a McWorld (p. 121).

Clark's vivid description depicts how easy it is to get taken into standardization of not only goods but standardization of thought. The family, in its daily interactions, teaches conformity and standardization of thought to its members in conscious and unconscious ways. We need to ask if this is a desirable quality in families if their role is to maximize the potential of family members.

**Meanings of Work** — Henry Ford is the founding father of assembly line production. His idea was that the assembly could facilitate mass production and satisfy mass consumption needs. It allowed for an increase in production at lower costs and permitted the paying of higher wages. The increase in wages allowed for higher consumption (people had more money to spend) which in turn lead to higher production.

Since Henry Ford's invention of the assembly line, technology has become more and more the basis of the industrial society. On one hand, the assembly line provided for more jobs, but on the other hand it eliminated others.

Considerable research has been done on the effects of the assembly line work on the worker. According to Schwartz (1982), assembly line production caused a deskilling of labor. She stated that "... routine jobs provide people with no opportunities for formulating aims, deciding on means for achieving their ends, or adjusting goals and methods in light of the experience" (p. 634). When people work at jobs that involve mainly mechanical activities, they tend to be less capable and less interested in rationally framing, pursuing, and adjusting their plans during the rest of their time. It is further claimed the "hierarchical division of labor extinguishes the worker's ambition, initiative, and purposeful direction toward life goals" (p. 640). Malincono (1983) supported the premises of Schwartz and claimed that technology contributed to a worker's feeling of alienation, meaninglessness, and normalness.

Bell (1973) concluded that we need to give attention to not only the obvious direct costs and benefits of technology but the second and third order impacts and to the delayed, unintended, or indirect consequences. We need to design education programs that will make students more aware of (a) the existing state of affairs regarding family and technology, (b) a desirable state of affairs regarding family and technology, (c) consequences (both positive and negative) of technology, (d) alternative strategies or methods to achieve a desirable state of affairs regarding family and technology, and (e) actions to be taken in the future.

### Educational Programs About Family and Technology

Wisconsin secondary Home Economics education programs are involved in a curriculum change process that redirects Home Economics to a family focus approach (Fauske, 1986). This approach is further described in the *Wisconsin Home Economics Guide for Curriculum Planning*, (Department of Public Instruction, 1987). A new course for high school students called Family and Technology is being proposed as part of the 1990's Home Economics family focus program model. The purpose of this course is not to study household technology (i.e. microwave, food processor, home computer, etc.) but to provide opportunities for students to develop the skills, knowledge, and abilities to take a more reasoned approach to family and technology.

From the family focus perspective, technology is more than machines or equipment.

Technology is using technical knowledge to solve problems as well as the process of this way of thinking. Technology has contributed to a certain kind of thinking (described earlier as the technological mind set) which has the primary goal of solving problems in the quickest and most efficient ways. This kind of thinking limits family freedom to recognize and to pursue common interests and goals.

The Wisconsin Department of Public Instruction has been actively providing leadership for the development of a Home Economics based on the family focus approach. The conceptual framework for the *Family & Technology Course* of the *Wisconsin Home Economics Guide for Curriculum Planning* is described below.

### Conceptual Framework for Family and Technology Course

#### Course Description

The Family and Technology course explores the profound effect technology has had on the way the family lives, thinks, feels, and perceives the world about them. The course challenges students to think about the technological future and its relationship to family and job life. Course instructors pose questions about directing or reacting to technological changes.

#### Rationale

United States citizens live in a complex industrial society that is being made more complex each day by further technological advances. Individuals and society respond in various ways to technological development. For example, work schedules, authority relations, and life in classrooms all reflect the development of the clock ages ago. The automobile has made possible a mobile society, directly and indirectly created and eliminated jobs, and added to stresses within the family.

Making wise decisions in the midst of these changes is difficult and requires a variety of skills, as well as a broad range of information. The family teaches these skills to family members. The family also nurtures particular responses to change.

Responses to change can result in such human effects as development of cohesive relationships or estrangement, involvement or alienation, development of individuality or conformity. When assessing the appropriateness of responses to technology, students need to consider the effect of technology on the responsibilities of the family for helping persons take actions that promote human development. The family can take an active role in directing the future and responding to technology, or it can take a passive role and merely react to changing conditions.

#### Course Questions

- What has been the historical influence of technology on the family?
- What is the significance of the past for the present and the future?
- What are various views about the relationship between family and technology, and what are consequences of those views for the family?
- What is the responsibility of the family in a technological society?
- What kinds of information should be taken into consideration when coming to decisions about the role of technology?
- How can information be assessed for validity and reliability?
- What is progress? What is the significance of progress to the family and to the family member?

#### Objectives

- Students will become more skilled in:
- comparing various views of technology;

- identifying characteristics and specific instances of progress involving technology;
- recognizing the influence of the technological society on orientations and ideals;
- distinguishing between positive and negative consequences of technology and supporting tentative judgments;
- weighing alternatives regarding the responsibility of the family in a technological society;
- recognizing the complexity of technology as an issue facing the family.

#### Concept Statements

- Scientific and technological knowledge may be used in ways that promote or hinder the potential of persons to be self-directed.
- Characteristics of self-directed persons include the capacity for independent thought and a concern for a just society.
- The family has responsibility for the development of capacities for independence and self-directedness in its members.

#### Related Topics

- Action
- Comparison of Views
- Environmental Complexity
- Personal Complexity
- Progress
- Responsibility of the Family
- Technology

#### Supportive Questions

- What aspects of family life have been changed by technology over time?
- What aspects of family life have not been changed by technology over time?
- How would technology be used if the interests of the family in developing self-directed capacities were paramount?

A group of twelve Home Economics teachers, as part of a Department of Public Instruction project, are developing course resource materials that supplement the conceptual framework for the Family and Technology course described above. The course is being designed to address the continuing concern of the family regarding "What should the family do about the influence of technology on the individual, family, and society?"

The intellectual skill of practical reasoning is being used to develop content for Family and Technology. Questions addressed in the course draw on the four categories of reasons (valued ends, context, congruences, and means) to form a judgment about what the family should do regarding the influence of technology. Modules are being developed for the Family and Technology course to explore the following questions:

#### A. Why should the family be concerned about technology?

**Description:** This introductory module is designed to provide opportunities for students to begin thinking about some of the positive and negative effects of technology on the individual, family, and society. The influence of the technological mind as a way of thinking will be introduced. The technological mind set is similar to the misuse of technical reasoning. Characteristics of the technological mind set include (a) addressing and solving problems based on expediency and efficiency, (b) seeing only part of the situation, (c) inadequacy of framing the problem, (d) emphasizing means or methods — goals are

assumed and unquestioned, and (e) complex problems are reduced to technical problems. The family teaches these thinking patterns to its members. Examples of the impact of the technological mind set on the family, society, and the world will be explored. Sample ways families can become more proactive in shaping technology will be explored.

#### B. What has been the historical influence of technology on the family? Vice Versa?

**Description:** In order to understand present orientations of technology, an understanding of the evolution of technology and the family is necessary. This module is designed to explore the historical influence of technology on the family and the historical influence of the family on technology. Aspects of family life that have changed and have not changed as a result of technology will be thought about. Reasons the family uses technology will be examined.

#### C. What are the consequences of the present orientation of technology on the family?

**Description:** This module is designed to heighten awareness of the social, political, economic, personal, etc. effects of technology on the family. Some effects include meanings families hold about quality of life, success, competition, standardization, progress, language, and use of resources.

#### D. What should the family do about technological mind set?

**Description:** The module will emphasize how technology has influenced the way the family thinks about things and perceives the world. Alternative ways of thinking about technology will be explored along with the underlying assumptions that are a part of these alternatives.

#### E. What actions are available so that the family can take a more intelligent approach to technology?

**Description:** This module will stress that family members have the capacity to shape technology as well as being shaped by it. Various strategies of what the family can do to take more informed actions that contribute to the accomplishment of desirable family goals regarding technology will be explored. Emphasis will be placed on individual and collective actions as a part of the process to affect change.

Subject matter and intellectual skills are being merged together as content to enable the building and maintaining of family systems of action. Some secondary schools in Wisconsin will be offering this course on a pilot basis in 1987-88.

## Conclusion

This paper explored the positive and negative influences of technology on the family and society and shared an educational program designed to help individuals and families take an active role in directing their future and responding to technology. Technology is a powerful societal force that has affected the family in a multitude of ways. Home Economics educators are challenged to accept their responsibility for helping students, as family members, to become aware of the significant influence of technology and to act on their own behalf to direct it.

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# Home Economics & the Growth of Household Technology

Janice G. Elias

**The author examines the movement of technology into the home and describes four stages of technology. The stages represent development from helping people use technology to solve problems to helping people solve the problems created by technology.**

The growth of Home Economics has been concurrent with the growth of household technology. In an address commemorating the 65th anniversary of the first Lake Placid Conference, Hall (1945) stated:

In 1899 modern plumbing and electricity, which play a major part in our level of consumption today, were practically unknown. Bathrooms and kitchens with the facilities we now take as a matter of course were not known. Electricity, with its resultant uses in making our homes more comfortable and more adequate, was undreamed of. *How did home economics deal with these things?* (emphasis mine) (p. 18)

The movement of technology into the home and the prevailing attitude of the Home Economics field toward that movement are examined in this article.

There appear to be four different stages in how home economists have viewed household technology. In the first stage, *Task vs. Toil*, technology was viewed as a blessing to relieve the burdens of housework. Stage two, *Getting Your Money's Worth*, was characterized by a strong consumer movement. In the third stage, there were two different reactions. Some professionals, in a desire to be futuristic and progressive, advocated home appliances without much thought to their true worth to families (Belck, 1983). At the same time, more thoughtful voices expressed concern about the unknown consequences of the automated lifestyle. I have labeled this stage *Profits and Prophets*.

Most recently home economists have been having *Second Thoughts* about the ability of technological advances to inspire the quality of life. Throughout these stages home economists have evidenced a keen desire to know about the latest advances in technology.

## Technology vs. Toil (—1930)

According to Burgess (1983) the founders of Home Economics believed technology could be brought into the home to improve the lives of women. Emphasis in the early years was on how to reduce human energy expended in household tasks, and one way which was advocated was the use of labor-saving devices (Ortiz and Morrison, 1983).

Home economists from the very beginning were involved in the testing of household equipment. Ellen Richards used her own home as a laboratory for innovative products and technologies (Thompson, 1984). The Good Housekeeping Institute was founded in 1901 (Traeger, 1979), and the Federal Office of Home Economics began household equipment research in 1915.

During the twenties labor-saving devices began to move more rapidly into the home for two reasons. First, the cost of items such as washing and sewing machines fell. Secondly, there was a shortage of domestic servants because of immigration restrictions and increased opportunities for the unskilled in factories (Cowan, 1983). More middle-class women were investing in capital equipment rather than labor, and home economists helped them evaluate the construction of these appliances and care for and use them properly (Ortiz and Morrison, 1983). Electricity was moving slowly into rural homes and home economists asked the U.S.D.A. to study work in the farm home and the relationship of mechanization to family well-being (Pundt, 1980).

The first energy crisis occurred when there was a natural gas shortage, and home economists called for conservation. An ecological perspective can be seen in this 1920 quotation which would have been equally apt in the 1970's:

Natural gas is a natural resource in which every inhabitant of this country has an equity . . . natural gas is not replaced by nature and in comparison with the life of the nation, the duration of the supply will be brief (Colwell, 1920, p. 226).

When the temporary crisis was over, it appears that home economists were silent in the matter for forty years, and households continued to increase the substitution of

fossil fuel energy as a way to reduce toil.

These changes would have ramifications for interpersonal relationships which home economists apparently did not consider. For example, Norton (1984) pointed out that the introduction of sewing machines changed sewing from a social activity to an individual one. It is not surprising that home economists would have a less questioning attitude toward technological innovations at the beginning of the century than some do now. The rate of change in the nineteenth century was slow, and the concept of *future shock* had not been developed.

## Getting Your Money's Worth (1930-1945)

The Depression in 1929 not only slowed the acquisition of appliances but reduced the use of servants. Some, who could afford to do so, purchased appliances instead of retaining servants (Cowan, 1983). In spite of the poor economy, home economists were finding jobs as appliance demonstration specialists (Ortiz and Morrison, 1983). In 1934 there were 350 HEIBs, many holding jobs in equipment or utility companies (Pundt, 1980).

The major concern at the time appeared to be helping the consumers get their money's worth. AHEA published data on the comparative cost of cooking with gas or electricity (Potter and Dressler, 1931) and advice on buying refrigerators and electric cleaners (Pundt, 1980). AHEA cooperated with the American Standards Association in developing guidelines for consumer appliances (Pundt, 1980).

Home economists were a futuristic group during the thirties. The Syllabus of 1935 included discussion of air conditioning and cleaning and humidifiers ("Tentative revision," 1935), and a 1931 author predicted air conditioning would soon be in every well-equipped home (Ingels, 1931). The 1939 built home of Frances Sanderson, head of Wayne State University's Home Economics Department, was selected by General Electric as one of 20 Outstanding American homes "complete with every electrical appliance possible" (Owen, 1940, p. 159).

Consumers who would have liked to follow her example were hampered by the



outbreak of World War II. Most effort went into war production rather than domestic appliances. Care and repair of existing appliances were important, because replacements were difficult to buy. When Beveridge looked back upon research in household equipment in 1959, she concluded that the emphasis through 1950 had been on performance tests. This would seem to be an appropriate response to the Depression and World War II.

### Profits and Prophets (1946-1970)

After World War II the increase of technology in the home was much more rapid than in the preceding decades for several reasons. Much technology had been developed for the war effort which was later translated into consumer goods. Home economists participated by meeting with design engineers and executives from manufacturing firms to make plans for postwar production (McCracken, 1945). Many women who went to work during the war remained in the work force. Home economists helped them deal with the time dilemma by teaching work simplification and encouraging the purchase of labor-saving appliances (Ortiz and Morrison, 1983). There was a great deal of pent-up consumer demand because of the inability to buy during the Depression and World War II, and the affluence after the war permitted this demand to be satisfied.

Margaret Justin, a former AHEA president, warned Journal readers in 1946 that the world was sick with materialism. She reminded AHEA members that "Home economics stands for the freedom of the home from the dominance of things . . ." (Richards cited in Justin, 1946). Justin felt that there was a tendency to assume that the pursuit of things was the pursuit of happiness. She was, however, out of step with the times as home economists were also caught up in and contributed to the trend of conspicuous consumption of technology. ♦

For example a 1950 Journal article listed television, automatic washers and dryers, electric dishwashers, and air conditioners as *essential* in the modern home (Gilliss, 1950). By 1959 there was an incredible array of small appliances being offered to consumers and to Home Economics teachers in particular. A special equipment issue of *What's New in Home Economics* (1959) included copy on 31 appliances, including knife sharpeners, baby-bottle warmers, ice crushers, waffle irons, egg cookers, floor scrubbers, ice cream makers, popcorn poppers, juicers, bean pots, and warming trays. These articles were interspersed with advertisements from manufacturers and offers of free teaching kits and discounts for

classroom use of appliances. Advertisements stressed the psychic rewards for using appliances. Perhaps as the physical toil of housework was reduced, the opportunity for *job enrichment* became more salient to homemakers.

The increasing amount and importance of household equipment were reflected in college curricula. Separate equipment courses were being developed in college Home Economics Departments (Ryan and Weaver, 1959).

Increasing automation in industry led to concern about the effects on workers. Home economists as well began to give serious consideration to the effect of technology on family life. Irma Gross (1957) examined the possibilities and limitations of automation in the home including the influence upon the roles and relationships of family members. She warned, "It is equally dangerous to accept blindly every change as something desirable; and also there is great value in thinking through ahead of time the change that will probably be forced upon us" (p. 262).

The golden anniversary year of AHEA, 1959, prompted Home Economics leaders to evaluate the past and set goals for the future. It was in retrospect that the vast technological changes became apparent. Montgomery (1959) listed mechanization of the home as one of the eight principle developments in housing during the previous 50 years. He pointed out "the combined effect of mechanical home devices upon the lives of the owners is still to be determined" (p. 584).

Crandall included technical advances in her model of change forces affecting family life. Her words foreshadowed the ideas of Toffler in *Future Shock* (1970), ". . . technological advances in household equipment have resulted in such drastic changes in the role of the homemaker that she has not yet achieved security in her new role" (Crandall, 1959, p. 347).

The calls made in 1959, for concern about the impact of technology on the family, were not followed by a wealth of research and publication in the sixties. Although the Federal Communications Chairman called television programming a *vast wasteland*, home economists appeared to be relatively unconcerned about the issue. A few graduate students studied effects of television viewing ("Titles of theses," 1966) but the topic was not prominent in the *Journal of Home Economics* or at Annual Meeting. In fact *Forecast* reported that "a television set by General Electric adds the final touch of hominess" to a *Home Economics* suite ("Teacher furnishes," 1965).

The economy of the sixties enabled the trend of conspicuous consumption to con-

tinue but a few signals presaged the problems of the seventies to come. OPEC met for the first time, there was a seven-state power failure, and gas consumption began to exceed new discoveries. Concern about the environment and limited resources began to arise.

As in earlier decades home economists continued to be in the forefront of awareness about technological developments. A 1967 annual meeting session was entitled "Can a computer become a household appliance?"

### Second Thoughts (1970— )

The hints in the sixties of a coming energy crisis were fulfilled in the seventies. The Journal and Annual Meeting agendas showed a strong response to the problem with special theme issues and many meetings. Home economists realized they had been practicing and teaching a high energy lifestyle which had helped bring about the crisis (Horn and East, 1982). The crisis brought about the idea of "resubstituting human energy for fossil fuel" (Morrison et al, 1978). This can be seen in the voluntary simplicity of life movement described by Pestle (1984). This lifestyle advocated by some home economists deemphasizes technology and includes emphases on ecological concerns. Recycling, gardening, home preservation, and solar energy to dry clothes are examples. It appears that in some way a circle has been completed with a return to practices which were common at the beginning of the century.

A second event which prompted a harder look at the mixed blessings of technology was the dissemination of time use studies. In spite of modern conveniences homemakers spend almost as much time in homemaking today as 75 years ago (Walker and Woods, 1976). Cowan (1983) theorized that technology created more rather than less work for the homemaker.

Home economists, however, have remained very interested in the potential for using technology to improve the quality of family life. The current emphasis is on information technologies including computers and cable television systems.

### Future Scenarios

Home economists' involvement in the transfer of technology remained high throughout the century. Involvement will continue but may take one of two different directions. The pattern of the fifties and sixties may be repeated as home economists become enamoured with the *electronic cottage* and fail to consider third order

consequences. Third order consequences are "inevitable yet unpredictable consequences of technological innovation..." (Thompson, 1984, p. 5). An example of a third order consequence identified by Kreinan (1981) is that food vending machines, self-service supermarkets, telephone recordings, and private automobiles have reduced the opportunity for human interchange.

The preferable future would be one in which the profession is actively involved in the shift identified by Naisbitt (1983) from a world in which technology is a given to a world in which we choose the character of technology we employ. The current literature in Home Economics indicates that scholars are paying a great deal of attention to third order effects and that the profession is becoming more proactive. Hayes (1984) said that home economists must be involved in public policy and take an active role in fitting technology to the needs of individuals, family, and society. To help families gain more control over technology, the Cooperative Extension Service, for example, produced a booklet which described the effects of television on the family and gave suggestions for dealing with those effects (Streeter, Ellis, and Engelbrecht, 1982).

A complementary trend in Home Economics which will assist in making this preferable future a probable one is the use of a systems approach. A systems point of view helps one keep in mind that events do not exist in isolation but affect the system into which they are introduced. Home economists are internalizing a way of thinking illustrated by this quotation from an article on buying computers:

As family-oriented professionals, they (home economists) must attempt to understand the *implications* (emphasis mine) of increased interaction with electronic devices and the *effects* (emphasis mine) on lifestyles, health, interpersonal relationships, and the growth and development of individuals (Collins, 1982, p. 17).

The disillusionment which arose in the seventies, regarding technology as a solution to problems, coupled with a systems view and heightened awareness of third order effects, will propel home economists to take a more active role in controlling technology in the future. We have moved from helping people use technology to solve problems to helping solve the problems created by technology.

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# The Impact of Technology on the Family: A Personal and Global Challenge for Home Economics.

Eleanor M. Collins

**This article discusses the impact of technology on society and the family over time. The question of balance — the old with the new — confronts home economists, families, and society as we move into the future.**

Throughout history inventions have expressed the creativity of humankind in responding to real and perceived needs. With each new major advancement, individuals experienced upheavals in their lives and work. Each new device or technique was a forerunner of other advances and innovations. Humankind moved from a gathering and hunting existence to farming and agriculture. Roots were established and a sense of community and family developed. The printing press enhanced learning capabilities for the masses, the arts flourished, and a sense of history and culture was established. Machines and new modes of travel were invented, as humankind moved into the contemporary era.

Industrialization removed tools of production from the home, shifting the family's focus from production to consumption. New tools, and improved versions of old tools, changed household routines as more technologies were introduced. People experienced a new world of goods and information never before known. New products, new appliances, and the new energy sources required to use them, meshed to bring about another industrial revolution—the one in the home.

Industrialization brought with it unforeseen social results. It changed not only how work was done, but what work was done and who did it. As families in private homes became consumers of marketing and utilities through technological change, socially they became far more isolated due to removal from production roles. Americans began to refer to home and work as *separate spheres*. The world of the family became a different universe from the working world. Women managed the domestic sphere while men ruled the industrial one.

Household work changed drastically during the past half-century. As basic domestic tasks were accomplished quickly

with the aid of technologically advanced appliances, they began to be repeated more frequently, accelerating the rhythm of housework. Higher standards of personal and household cleanliness and variety in foodstuffs and menus emerged. But the advanced and easily operated equipment still had to be operated by human beings.

The history of housework suggests that technological change benefits some groups more than others, because the time women spend on housework has remained nearly constant. It is evident that in many dual-earner families the wife carries an overload of roles. Appliances are used by the manager/worker, with little delegation or assumption of tasks by others. Since technology in the home has done little to change the traditional male and female roles, a new socialization in roles is in order.

Technology cannot substitute for family interaction and decision making related to who does *what* and *when* in regard to household work. Management of households remains a vital task if families are to realize a desired quality of life. Family members still need care—a job that cannot be delegated to a robot (Snider, 1986). The common assumption that technological progress saves labor and frees people for *higher* pursuits is a myth (Williams, 1984).

The futurist, Wakefield, predicted that a big computer revolution is about to explode. By the latter half of this decade a major penetration of the American home by computers will turn the 1990's into a golden era of home computer use (Wakefield, 1986). The computer's relationship to home and family is potentially a powerful one in our emerging information society, because access to information offers power. Society's multipurpose institution, the family, is unique in its potential to take full advantage of the vast capabilities of the computer, civilization's first multi-purpose technology. Individuals and families can create, manipulate, transmit, store, and retrieve information as well as gain access to economic, political, educational, social, and cultural information with the aid of a computer. Families which are computer-empowered benefit through increasing self-reliance and decreasing dependence on

many outside information-based services (Sussman, 1985).

Many functions that were in the home before the industrial revolution—before education went to school, work went to factories and offices, and health care went to hospitals and clinics—can now be brought back home. The recent trend that has left many homes little more than places to eat, sleep, and watch television may now be reversed.

The youth of today bring computer skills from schools to their own families and households, giving families the in-house computer competence they have lacked. There is now potential for families to become more cohesive and to restore a large measure of their fundamental reason for being—mutual self-help and caring, thus fully consummating the family/computer marriage (Sussman, 1985; Wakefield, 1986).

With this background as a foundation, this paper will explore the positive and negative aspects of technology. In order to identify the challenge for Home Economics, the present and future impact of technology on the family will be discussed.

## The Positive Aspects of Technology

Benefits of technology are emerging, although they are not equally shared by all sectors. Increased options are available to families, thanks to the more reliable information upon which to base rational decision making. There are increased learning possibilities for all family members in both formal and informal learning environments.

Self-employment and working at home are growing occupational trends. The computer is a vital tool in enabling persons to operate businesses of their own, with little capital investment. Many people are already employed by computer-linked workstations to offices or businesses in other locations. A viable work option for a potentially increasing number of women and for those with limited mobility is the non-traditional work schedules in the home environment. The worker can attend to family-related tasks without a decrease in production.

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Security systems, energy control, banking and financial matters, and shopping are home management activities that can be computer monitored or assisted. The use of the home or office computer to get information on goods and services is already increasing consumer and family power over the production and distribution of goods and services. Computers provide family members with immediate, direct access to extensive public and private consumer information bases.

By supplementing the conventional education environments, computer assisted instruction can stimulate problem-solving and thinking skills in young students, either in the classroom or at home. Television, VCRs, electronic games, and computers all have the potential to be tools for learning. The key to quality is in the selection of the software and programming.

Computerized recreation and entertainment possibilities include activities such as cataloging of hobby collections and communicating with friends in distant locations. New computer games are intellectually interactive, unlike early versions which focused on speed and development of manipulative dexterity along with a degree of predictable strategy. Role-playing games blur the line between entertainment and education as new ways of learning and solving problems are introduced. Families can choose, adapt, and create their own programs and can structure leisure time to suit their own values, needs, intellectual interests, and preferences.

Medical care is changing rapidly due to technological applications in diagnosing, treating, and monitoring symptoms and illnesses in the hospital/clinic or at home through links with the physician's computer. For prevention, the family can now use computer-assisted health systems for diet, exercise, stress control, health-risk appraisals, and related areas.

In the near future medically related advances will benefit persons who are elderly, have handicapping conditions, or have health-related conditions. These include *smart cards* that contain a programmable microprocessor and store complete and easily updated medical files; bio-inserts that dispense drugs into one's body for up to 10 years before requiring surgical replacement; biosensors that measure vital data and transmit the information to the physician's computer for analysis; and possibly bionic organs such as electronic ears. These technological innovations will help to maintain or improve the quality of life as well as the life expectancy for the aging population in our country (Shostak, 1984).

Persons who are elderly or disabled have new possibilities of self-actualization

through the assistance of technology. Technology is a great equalizer by removing barriers to living and learning for persons who have special needs. Computers provide the assistance necessary to achieve equity with others. Through technological advances people without voices are speaking; quadriplegics are able to write, use the telephone, and manage their environment; and blind individuals are able to gain information from current literature sources without having to wait for someone to read to them. Communication aids and environmental control are the two major problems for persons with handicaps that can be alleviated with computerized assistance (Holyoak, 1986).

### Negative Aspects of Technology

The imbalance of humanitarian values in the world illustrates a universal management problem related to the application of technical know-how and the impact of technology on human welfare. Problems of sanitation, adequate storage and distribution of food, and lack of education and health care persist in spite of the technical know-how to alleviate them (Naisbitt, 1982). Many of the fearful events of our time involve the destructive use or misuse, the unforeseen consequences, or the disastrous malfunction of modern technology, such as Hiroshima, Three Mile Island, and Challenger.

The adverse impacts of technology are world-wide problems. Tens of thousands of people die each day from the lack of simple things such as clean water, housing, and basic health needs while millions are spent on armaments. Unknown poisons and hazardous consumer products kill or injure or impair the health of millions. Alcohol and drug abuse are major causes of thousands of deaths and millions of accidental injuries and contribute to crime, birth defects, property damage, and many other problems. Numerous products and appliances enhance our quality of living and *STILL* cause injuries. These and other examples illustrate how societies are not ready to cope with technology (Fazal, 1984).

A technology of waste, including wanton destruction and misuse of resources, of processes, and of products is a predominant characteristic of our society. Energy is wasted in overheated or poorly insulated homes and some modes of travel; food is wasted through plate waste, spoilage of unused commodities, and inadequate storage facilities; renewable and non-renewable resources are wasted by using an abundance of paper and non-biodegradable plastics and metallic packaging materials; overused detergents and other cleaning compounds pollute the environment; and

water is wasted in homes, recreation, and manufacturing. A list of needless waste could go on and on (Fazal, 1984).

On a global level, contemporary attempts in the political and economic domains to solve technologically related problems and establish a responsible techno-ethic have shown little real hope of success. Knowledge and inventions should be used to enhance our lives and standards of living, for good instead of evil, and to forestall the proliferation of technologies that are primarily designed for force and destruction.

On a micro-level, individuals and families experience negative, though unintended, consequences of high technology. Technology-related accidents are obvious, but less dramatic consequences may be more pervasive. Hi-tech devices such as computers and video games/recorders can be invaders of home space and family time. Children's perceptions of what is alive, what is real, and what is a simulated world may be confused. (Goodman, 1986; Turkle, 1984).

Inter-personal relationships appear to become impoverished or distorted by some individuals who develop intimate *friendships* with computers to the exclusion of human companionship. Feinberg and Walton (1983) reported greater intimacy of self-disclosure with computers than with other people in their research on human-computer social interaction. Computer programs like *ELIZA* (an electronic therapist) have elicited very personal responses from persons who are reluctant to communicate intimately with another person. In essence, the computer becomes an alter ego for some individuals (Feinberg & Walkton, 1983). For persons who may be insecure in relationships with other people, control can be found in the on/off switches of technology, but there are no on/off switches in social and family relationships.

Visual difficulties related to radiation from the video display and eye discomfort from poor lighting are common practices of extended computer use. Tired, blurring and aching eyes are a few of the potential problems which can persist. Ironically, the ease of using a computer may contribute to musculoskeletal problems from long periods of sitting. Back and neck strain, slow circulation in the legs, and generally reduced muscle tone should be recognized as conditions demanding attention for the frequent computer user (Smith, 1984).

Job stress caused by the frustrations of inadequate training, or trying to cope with the new era of technology, is cited as a common on-the-job complaint (Smith, 1984). Computers seem to be perfect in their capabilities. This characteristic may evoke anxiety in people about their own perfectibility. There is pressure from a machine that promises to do it right and right away, if



YOU do it right. That leaves no one and no other thing to blame (Turkle, 1984).

There is a widening gap—even a division—between the haves and have-nots of information, knowledge, and hence power. A tendency toward re-creation or perpetuation of the traditional sex stratifications of activities and interests appears to exist (Turkle, 1984). Language is apt to be impoverished and written language skills diminished by dependence on technology to produce and transmit information. A sub-culture of the information-poor are becoming suspicious and superstitious regarding technology (Presvelou, 1984; Turkle, 1984).

No one is, at present, in a position to make any serious forecast regarding the future impact of information storage and retrieval devices or other computerized functions and applications upon our personal lives. The amount and nature of personal data stored in various locations (by banks and the Internal Revenue Service, to name but two) with the potential to be retrieved by unknown entities is a frightening aspect to consider.

Parents have not been completely informed of the pros and cons of high-tech, of its effects on their jobs and the education and employment of their children, and of the way such technology may alter the interpersonal dynamics of their home life and activities. Goodman described a forecast for the future when artificial intelligence will enter children's toys and be able to sense their moods. These toys will offer programmed comfort, untouched by human hands (Goodman, 1986). What will happen to the fantasy world of children who dream and ascribe their own characteristics to their toy companions? Will individual imagination be further stifled in the process of incorporating high-tech into the world of play?

### Impact of Technology—Present and Future

The concept of progress has undergone a subtle but decisive change since the founding of the Republic, and that change is at once a cause and a reflection of our current disenchantment with technology. Technology became the primary basis for progress, an end in itself. It holds a philosophy that if we ensure the advance of science-based technology, the rest will take care of itself. This technocratic view accounts for much of our growth as a nation in the world, but the emergence of an anti-tech viewpoint began in the 1960's. Concern for the environment and for the future of our way of life is vital, because change continues at an ever accelerating pace (Naisbitt, 1982).

The twentieth century brought us electricity, electronics, and the micro-chip, enabling us to think faster, to process

information with startling speed, to adapt to new ways to manage our home and work environments, and even to *play* in different ways. Technology gives rise to new values and perspectives and to new intellectual, moral, and social issues. It has powerful influence over the way we go about our daily lives, perceive our cultural roles, and plan for the future. The emerging world of information, robotics, laser surgery, and instant response through technology is a future that would not even have been imagined a generation ago.

During the transitional age in which we find ourselves, it may be as difficult to let go of the obsolescence of the past as it is to anticipate the advances of the future. Counter movements toward the technological age are evident everywhere. The impersonal nature of electronic machines and the way in which people interact with them leaves a profound need for warmth, affection, and *softness* in our lives (Naisbitt, 1982; Presvelou, 1984). Expansion of high technology is accompanied by a concurrent renewal of *soft touch* in the way in which persons decorate their homes or select their clothing (padding, draping, and a broad color pallet to suit anyone's preference) and in the nature of their interaction with other people (*have you hugged your kid today?*). The counter movement is also evident in the renewed focus on handicrafts and other forms of recreation and relaxation which are not dependent on technology. Combinations of both qualities appeared in the talking bear, Teddy Ruxspin.

Individuals and society as a whole must find ways to balance the old with the new—the high-tech with the soft-touch—as we rush ahead into the future. Concerns about space travel, satellites, instantaneous transmission of information, new sources of energy, and issues related to the use of technology to prolong life need to be explored. Concerns about pollution, depletion of natural resources, overpopulation, the disintegration of the family, and other social problems compete for reasoned response. Instant media transmission of news and pictures created a vivid consciousness of strife, diversity of cultures, and problems of hunger in the world. The positive aspects of innovation and change through technology cannot solve these problems alone. Real and potential negative consequences are as inherent in new knowledge and inventions as the benefits for which they were designed. As described by Kranzberg, historian of technology, technology is neither good nor bad nor neutral (1986).

Home economists have the knowledge and abilities to work with practitioners in other fields in a mutually influential role. We have the talent and opportunity to bring about the articulation of hard technology

with the human factors involved with its use. The future direction of our profession may well depend on our ability to master technology and know what it can and cannot do. We must recognize and control its impact on our daily lives, because there is no doubt that our children will be living and working in a super-technological future. Our challenge now as home economists is to equip ourselves and those we influence to direct this future. At the same time, we should preserve—perhaps even revive—that which is good from our past.

The challenges we face CAN be addressed at a micro-level. We must become critically aware of the way we are consuming, voluntarily and involuntarily. We must develop an action attitude and always ask *WHY*. If the answer is *SHOULD NOT*—we should start with ourselves and do something about it. Social and ecological responsibility is inherent in Home Economics philosophy. The principle of cooperation should continue to be the hallmark of our profession. We should unite our efforts with other concerned people all over the world to become aware of destructive technologies and the negative aspects of good technologies on global, local, and personal levels.

Home economists are uniquely qualified to conduct consumer and family oriented research to identify constructive ways of using technology. Strengthening of family interaction patterns, enrichment of the education and training of our children, enhancement of communication, and the promotion of consumer self-reliance are but a few of the potential benefits of modern technology. We have created the computer and invited it into our homes, offices, and stores, but we must recognize that non-technical factors must frequently take precedence in technology-policy decisions (Kranzberg, 1986). Technology must always be the tool and not the director of our future. In questioning the assumption that innovation represents progress, we need to ask, "Progress toward what?" before incorporating the new technologies into our lives. This is a challenge we cannot ignore (Feinberg & Walton, 1983; Marx, 1987).

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## PROMISES TO KEEP:

### A Personal Message to Women Student Members of Omicron Nu

Lila Murphy

Omicron Nu has recognized many young women and men for the contributions they have made to the profession in the areas of scholarship, leadership, and research. As we celebrate our 75th Anniversary it is appropriate and rewarding to look back with a deep sense of pride at the accomplishments of our members. It is even more important to look to the future and to continue to encourage the best in our ranks to make a difference.

This article is a personal message to the young women students who are members of Omicron Nu. An encouraging and beneficial trend is that in recent years many young men have joined the organization. However, the majority of our members are female, and women will face unique challenges in the years ahead. We, as educators, have an obligation to help to prepare you to face the realities of life. The male members of the organization need to recognize the problems women still face in their careers, and they have a responsibility to support women in their development and as colleagues.

I've entitled my remarks PROMISES TO KEEP for a variety of reasons. Being a New Englander, I have always loved the words of Robert Frost, especially his classic "Stopping by Woods on a Snowy Evening." The last stanza of that poem underscores my message —

The woods are lovely, dark and deep  
But I have promises to keep,  
And miles to go before I sleep  
And miles to go before I sleep.

Change the *I* to *YOU* and the message is clear: you do have miles to go before you sleep. Begin first by accepting the fact that you are the *cream of the crop* and very special.

I selected the title PROMISES TO KEEP for several other reasons. First, I hope that after reading this you will make some promises you will want to keep. Second, I want to share the lives of three women who inspired me with the promises they kept, to themselves and to those they served. Third, I want to encourage you to prepare for and commit yourselves to becoming leaders, to help you understand why we need more women in leadership positions, and to discuss some of the problems and challenges you may face along the way. At the same time, I will be keeping a promise I made a long time ago to encourage young women to reach their highest potential. Last but not least, I want to reflect on how we as women continue to make a difference in this society.

#### Promise One - Plan, Set Goals

We who teach young women know that too few perceive themselves as special or deliberately plan a future with specific career goals. This fact is supported in the literature and research. Hennig and Jardim (1981), in their popular best seller *The Managerial Woman*, stated that women make late career decisions and that they have a sense of passivity about their future. Too often women wait to be chosen or feel that someone else is responsible for their success. Contrary to females, men move through their lives seeing each activity, each accomplishment, each job as a step in a career ladder. The 25 successful women in Hennig and Jardim's study

were different, because their strength resided in their ability to look at the long term and to define what they wanted in life and in their careers. Make a promise. Plan for the future, set some goals, and go for it! That is the secret to success.

#### Promise Two - Prepare Yourself

The university climate is an isolated one, and at the moment you are protected from many of the harsh realities of survival. Just remember, women will work—that is a fact of life, not an issue to be debated. You will be entering the workplace in a few years, and you need to be aware of the problems and challenges that you will face from within yourselves and from the external environment.

Look for a moment at the internal factors affecting women's success. There is a considerable body of research which examines the self-image of working women. These studies discovered that women have a negative view of themselves. They view themselves as less suitable for leadership positions, rate themselves as less intelligent and self-confident, and expect to be evaluated more harshly and more negatively than men (Williams & Brock, 1986, p. 7). The truth is that we believe what we have been told and have witnessed in our lives.

The day may come when you will need to deal with the pressures brought by role conflicts. Sadly, two studies conducted ten years apart found that many working women considered the home a source of pressure in their lives rather than a refuge (Hall & Gordon, 1973). And no wonder! The 1980's mother is a woman in transition caught between two powerful images. She grew up in the 50's and 60's when she was taught that to be a mother was everything and that she must be perfect in that role. The 1970's saw the birth of the superwoman. The superwoman myth is fading fast, doomed by anger, guilt, and exhaustion. Today, women are searching for a new ideal that reconciles the competing demands of family and work (Kantrowitz, 1986). Our legacy to you is to find that new ideal but promise that this time the solution will benefit you, not everyone else.

We could spend a great deal of time on the concerns of working women and the family, but I would like to focus on some of the issues related to women in leadership. Why would anyone want to be a leader, to be in a high level position with all the stress, conflicts, and problems which accompany such a role? Maybe it's like climbing Mt. Everest, we want to prove we are up to the challenge. As one woman said to me, "It's like having a baby, regardless of all the help I had, I did it myself!" Perhaps it's being in on the decision making process or the desire to control over one's destiny. I am sure there are many good reasons, but in all honesty there is one reason why most people want to achieve and get ahead—money!

And what's wrong with that? Isn't it time for us to share in this aspect of life—by choice and because we deserve it! Consider the fact that women have flooded the job market and boosted economic growth. Women seized two-thirds of the jobs created in the past decade and provoked the shift from a manufacturing to a service oriented economy (Pennar & Mervosh, 1985). We have made a difference!

Opportunities abound. It is projected that, in the next decade, about six million more jobs will be available in the most skilled occupations (executive, professional, and technical areas) compared with one million in less skilled categories. Women will account for 63 percent of the new entrants into the labor force ("Change in America," 1986). It has been predicted that at the end of the century 45 percent of management positions will be held by women (up from 36 percent). This prediction offers good news for women leaders who have delayed childbearing. Women who postponed a family until after age 25 earn 36 percent more than those who had their first child between the ages of 22 and 26 years (Farrell & Walker, 1986).

That's the good news. There are still many challenges for women in the workplace, and you must provide the leadership needed to resolve these concerns or changes won't happen. Perhaps one of the most depressing facts is that women are still concentrated in a narrow range of jobs and industries (called occupational segregation). Women are stuck in a limited range of job titles, and the number of female managers has not been proportional to the influx of women into the labor force. Women total 5 percent of middle management positions and barely 1 percent of top management. In money terms, that means that only 102,000 female managers earn over \$25,000 a year as compared with 2,560,000 males (Brown, 1981). One other piece of information, which some see as good news but I find quite discouraging, is that by the year 2000 it is predicted that women will earn 74 cents to the male dollar, up from the current 64 cents ("Women seen," 1984). Progress is slow. Linda Keller Brown (1981) reviewed the research on women managers in the United States and found significant shifts in social attitudes which support women in career positions. She believes that, while there have not been real statistical gains in numbers and earnings, these positive attitudes reinforce women's aspirations. The desire to get ahead is becoming more important to women, and they are doing something about it. "Women do not have the unmarketable arrogance of many men who still assume that skills acquired in their early twenties will earn them a living in their fifties" (Brown, 1981, p. 15).

What does all of this mean? There will be more opportunities for women in leadership positions. Women will compete, even if they go it alone. Where will you be? Out there competing or waiting to be asked? It's time for another promise—prepare yourself so you can achieve the best possible position. If you are going to work you might as well be paid for your efforts.

This promise is important because we need you up there on top. Why? Women have changed and will continue to change the face of management/leadership. We have always known that the special qualities females bring to the workplace make a difference. Experts like Peters and Waterman have made a fortune with their best selling book, *In Search of Excellence* (1982), by legitimizing what we have always known—that nothing good and right happens without personal concern for the individual.

#### Promise Three - Accept and Influence Change

Many say that if we are to make it, we must change. I have to smile when I think about some of the books that have been written on how a woman can be successful and survive in the work world. We have been told how to dress, how to speak, what games to play, why we fear success, and even how to maintain our femininity while saying no to the boss. Most of these masterpieces focus on what we must do, what we must change to be accepted in the male environment. However, I must agree with Dr. Nancy Henley, a feminist psychologist and author of *Body Politics* (1977), who feels that too much emphasis is placed on changing the way women think, speak, and behave and that this is essentially a form of blaming the victim.

In the future you, the elite of our profession, will continue to change organizations and institutions because you have those special qualities which make a difference. Antonia Shuster, a CitiBank executive, believes that because women are better able to cope with the sometimes messy emotions of the workplace, they foster a greater sense of belonging in their employees. That, in turn, breeds loyalty and encourages people to do their best. Nancy Clark Reynolds, President of a Washington lobbying firm, feels that women's intuition is an important plus. Women pick up subtle vibrations and undercurrents, thus they are able to address concerns before they become big problems. We all know that parenthood teaches women the arts of compromise,

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conciliation, and listening. It is also good training for crisis management (Hall & Gordon, 1973). Management of the home teaches one how to juggle many activities at the same time and how to stretch a dollar and an hour of time. Also, women are concerned for getting things done and pay less attention to turf and the hierarchy. All of these skills carry over into one's career.

If women are not given equal opportunities (and there is good reason to believe they won't), then they will find other ways to excel. Women will continue to demonstrate their superior management skills and threaten takeover in the 21st century (McCallister, 1986). We can no longer live with the attitudes of those who believe that "women still are not really expected to make it. Nor is it considered very important if we don't" (Foxworth, 1978 p. 239). One writer asserted that we still have a lot of men who feel management is a God-given right, but we know that there are too many young women who have no intention of buying into that argument (McCallister, 1986). Hopefully, you are one of them.

General Eisenhower used to demonstrate the art of leadership with a simple piece of string. He'd put it on the table and say, "Pull it and it will follow wherever you wish, push it and it will get you nowhere at all." Will you be a pusher or a puller?

There is a need for a new philosophy of leadership, one which redefines power, if women are to accept success as well as to influence and change existing structures and attitudes. Using one's power in the service of others is real power. A well run organization, group, or family should not be a battlefield for egos clamoring for personal glory, self recognition, or power through domination and aggression (Heider, 1986). The best way you can effect change is to change. Promise that you will accept and influence change!

#### Promise Four - Find a Mentor

My next promise can best be expressed by sharing a brief history of three women who made a difference. These great ladies are special to me, because they were all teachers. In this day when teachers are viewed in a negative light, we would do well to look at the contributions that some have made.

First is Eleanor Roosevelt. I admired her not because her husband was President but because of her ability to find her own identity and make contributions in her own right. Some would say she came from a privileged background. But how many recall that she lost her parents and a younger brother when she was ten years old and led a very lonely life. In the late 20's she became an assistant principal and teacher of literature at a school in New York City. Mrs. Roosevelt was convinced that education was the primary route through which progress for all people was possible and that better education would prevent the recurrence of war. Most of her life was dedicated to youth and to the plight of the American worker. Yet, there was another reason why I admired her. She was a very unattractive woman, and the press was not always kind to her. But she rose above it. In a country that prizes beauty and youth, she became a legend. As a young woman, who was severely burned as a child and classified as handicapped, I found great strength in her attitudes and actions. She helped me believe in myself and not in what others think.

Second is the noble Golda Meir, a Russian born Jew. She came to the United States, settled in Milwaukee, attended a normal school, and became a public school teacher. But she had a bigger dream than most. In 1921 she went to Palestine. This pudgy, Jewish lady with the big nose worked to establish the Jewish State of Israel, held several high political offices, and in 1969 became Prime Minister of Israel. Could a woman like this become President of the United States? (When Geraldine Ferraro ran for Vice President, all one heard about were her dowdy dresses, boyish haircut, aggressiveness, and of course her husband.) I admired Golda Meir because she was able to interact with male leaders from around the world in a manner befitting a queen, never bowing to anyone and always expressing compassion for her people.

My third heroine is Barbara Jordan, a lady with class. This southern, black woman from Texas became (and some believe still is) a formidable politician. She graduated from Boston University Law School and, against all odds and after two defeats, became the first black woman in the Texas legislature. Later she was elected to the United States Senate. She will always be remembered for her impassioned, eloquent remarks during the Watergate Hearings. Her dedication and commitment to truth and honesty made all women proud to be female. She left public office at the height of her career, because she felt she could do more for her country by teaching college students. Some say she left because of poor health. I say she left because she has more wisdom than most of us.

Find yourself a hero, heroine, mentor, or whatever. Make that a promise! Learn from these exemplary individuals, and maybe the day will come when you will be someone's heroine. You can leave no greater legacy.

#### Conclusion

It's interesting where one finds heroines or finds oneself. Often, it's the ordinary and unexpected events in life that make one grow. Let me share an experience with you. I call it *The Gift*.

I was an ordinary teacher doing an ordinary job—no big problems, no big hassles. Then she came into my life—a girl with a need. She stood there before me, unable to speak. A tear ran down her cheek, and she stretched forth a shaking hand asking for help. But I was in a hurry. I had more important things to do. So, I left her there alone and desolate. From that day on she never asked for help, never reached out again, and never shed another tear. Regardless of how hard I tried I couldn't reach her, but her face would not go away. She left my class and the school, alone and desolate. Now she is my conscience. She changed me forever. Because of her, I have tried to make sure that no other student suffers that loss of human dignity. Wherever she is today, God bless her. She made me what I am—a better woman, a better teacher, a better human being. What greater gift can one give another?

So please care, and care about each other. Promise to support each other. "If male criticism was all we had to fear, we'd be well off indeed. Everyone who has excelled in her field knows that the bittersweet experience of all is the lack of support, the envy, the bitterness we frequently get from our female colleagues. We are hard on ourselves and hard on each other" (Foxworth, 1978, p. 246). Remember, we exemplify our philosophy far more eloquently by our actions than by our pronouncements.

One final story—I am reminded of the university president who was asked what had become of her last graduate dean. Her reply was, "He left as he came, fired with enthusiasm." It is my hope that as you look to the future you will be *fired with enthusiasm* to reach your goals in life and to keep those promises that will make it possible for you to *make a difference* in your own lives and the lives of others.

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# Impact of Financial Services Technology on Consumers: Recommendations for Professionals

Jean M. Lown

**Positive aspects of technological changes in the financial services industry include more choice, better access to information, new products and services, and improved tools for decision making. Higher fees for basic services, complexity, confusion, and reduced access to services for disadvantaged consumers are among the negative features. The author concludes that professionals can assist consumers through research, education, public policy, and professional development activities.**

The trend toward increased use of sophisticated technology in the financial services industry is an example of Naisbitt's (1982) assertion that America is experiencing the transition from an industrial and service oriented society to an information society. The financial services marketplace will continue to become more complex as new financial products are introduced and as the use of computers allows an unlimited combination of features to customize financial services.

Among the four basic consumer rights proposed by President Kennedy in 1962 were the right to information and the right to choose. The decades since the original proclamation of consumer rights have brought forth an abundance of new products and services and limitless variations on once familiar products.

Today's mortgage applicant is confronted with myriad of decisions involving fixed versus variable interest rates, amount of down payment, length (15 to 30 years), monthly versus bi-weekly payments, and choice of interest rates and origination fees. There are many complicated decisions to be made as interest rates can be brought down with a shorter term and higher origination fees. Even the options for a car loan can be staggering. Shopping for the lowest annual percentage rate of interest (APR) is only the beginning of the complex decisions required: fixed versus variable interest rates, a 20 percent down payment or no down payment at a higher interest rate. Is it worth the cost to purchase credit life and disability insurance (generally a poor buy) to get a ½ percent discount on the loan? Is a 3 year or 5 year loan a better deal? A shorter loan would allow taking advantage of the consumer interest tax deduction before it is phased out. Perhaps leasing is a better alternative.

How can the consumer who is unaware of such options be expected to make an informed decision? A computer spread sheet program is one of the most effective tools for evaluating the various combinations of terms. However, it may be easier to consult a financial planner who can assist in determining the most appropriate combination of terms within the context of the new tax laws. A determined consumer with time for extensive research and the aptitude for juggling numbers may be able to arrive at an optimal decision with the aid of a calculator, current literature on the Tax Reform Act of 1986, and self-help articles on mortgages.

"Each consumer is assumed to be able to compare the alternatives and identify his preferences among them. The consumer then chooses the alternative which maximizes his satisfaction subject to the income available" (Meeks, 1981, p. 43). This assessment illustrates the challenge and problems facing consumers. Without the assistance of computers and professional guidance, there is a wide gap between how the system is supposed to work and reality. Simple rules of financial decision making are no longer valid when decisions involve complex interdependent variables. Cars and homes are not the only product categories that have become more complicated; new insurance and investment products can be equally confusing. A person who is intimidated by an automatic teller machine may have difficulty understanding the difference between variable and universal life insurance.

Technological innovation plus deregulation of the financial services marketplace have combined to complicate family financial decision making and management. No longer can a consumer simply open a checking or savings account at a local bank without being faced with three or more options. Much of the innovation was made possible by the use of computers.

This paper will address the question of how to assist consumers with this rapid technological change. Home economists need to understand the impacts on con-

sumers and how to influence the direction of change through the private sector and public policy.

## Technological Impacts

Hira and Fletcher (1985) identified rising prices and reduction of cross-subsidies as major impacts of technology and deregulation. They offer suggestions for research, education, and public policy. "The extent to which technological advances in the financial services industry will benefit the consumer depends not only on the services provided, but on the willingness of customers to adopt new technologies" (Hira & Fletcher, 1985, p. 211). Consumer response to automation in financial services has not been all positive; many are reluctant to adopt the new technology (Hayes & Swartzlander, 1983; Jensen & Chen, 1985; "Americans," 1984).

## Positive Aspects

Technology provides opportunities for convenience, more choices, new products and services, access to more information and tools for improved decision making, and lower costs for the industry. Computers made the technological revolution possible and are the key to dealing with the changes which resulted.

Hogarth (1985) reviewed three issues relating to technology and financial decision making: investment and credit alternatives, the delivery of financial services, and access to information. On the positive side, Hogarth observed that technology can be used to improve financial management and decision making. Computers enable financial institutions to offer customized financial products while enabling consumers to make better decisions by examining a variety of scenarios. The provisions of savings certificates, mortgages, and car loans can be adapted to individual needs and preferences.

Home banking by computer and automatic teller machines provide convenience

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to consumers while allowing financial institutions to reduce costs (Hogarth, 1985). Videotex services such as CompuServe and Dow Jones News Retrieval allow consumers access to financial information and interest and savings rates at financial institutions around the country. Consumers without such services will need to spend more time and effort to search for information (Hogarth, 1985).

New products and services such as graduated payment, variable rate mortgages; automated teller machines; home banking by personal computer; variable and universal life insurance; and new investments are available due to technology. Hogarth (1985) summarized the benefits of technology in financial services as providing more choices and a wider range of services for families. Further, she predicted that access to better information will improve decision making, and technology may facilitate more family participation in decision making.

### Negative Aspects

Hogarth also acknowledged the issues of unequal access to the information and decision making tools, the uncertainty of variable rates, and the problems of over-choice. Expanding choice and variable rates on credit and investment instruments may result in confusion and alienation. "The rapid changes in financial markets can bring greater opportunities for consumers only if they can understand and evaluate the options accurately. Otherwise, the changing scenery can lead to consumer exploitation" (Morse, 1981, p. 83). At the same time, the proliferation of financial services, complexity in products, and wide range of options can change freedom of choice into the paralysis of over-choice.

Access to information and services often is restricted by a lack of financial resources (Eastwood & Swagler, 1982). For example, personal computers which are required for home banking are owned primarily by upper income, well-educated consumers ("Americans," 1984); videotex services are costly and available only in limited urban areas (Widing & Talarzyk, 1983). Concern that access to high technology financial services will further divide the *information rich* from the *information poor* (Widing & Talarzyk, 1983) has been expressed by many consumer economists (Hayes & Swartzlander, 1983; Jones, 1983; Maynes, 1983).

Hampton, Greninger, Kitt, and Bouton (1985) examined consumer concerns with automatic teller machines (ATM's) and discovered that consumers are most concerned about lost or stolen ATM cards, followed by errors, personal safety, and the

impersonal interaction. Greater knowledge of federal legislation was related to a higher level of concern about ATM's.

Most of the advantages will accrue to middle and upper income and younger, better educated consumers who can afford the technology and understand the wide range of options. Technology may be serving as a wedge to further separate consumers into "haves" and "have nots" (Jones, 1983; Hayes & Swartzlander, 1983; Widing & Talarzyk, 1983).

A study by the American Express Company (Fernstrom, 1984) found that some consumers, typically those with low balance accounts, are being forced into some systems and accounts that they may not want due to steadily rising service fees. Consumer leaders who responded to the survey expressed concern that low income, poorly educated, and handicapped consumers would be deprived of financial services by the increasing service fees and technological changes. These consumers are unable to maintain high minimum balances required to avoid service fees and may lose access to financial services as branch banks are replaced automatic teller machines (ATM's), direct deposit of payroll checks and home banking via computer. Certain groups of consumers including the low income, elderly, and less educated, those who are out of the mainstream of the consumer culture, are being affected negatively by this revolution in financial services (Eastwood & Swagler, 1982; Hayes & Swartzlander, 1983; Jensen & Chen, 1985).

Technology has enabled financial institutions to segment their services and service charges, ending the cross subsidization of fees. Since deregulation, consumers with large savings balances are not willing to keep their savings in a low interest passbook account to subsidize small accounts. The resulting increases in fees for basic financial services have been documented by the Consumer Federation of America ("Bank fees," 1987).

Responses to the American Express study (Fernstrom, 1984) indicated that even well educated consumers experience difficulty in making wise choices among the many complex new products. More product information and disclosure are needed to balance the effects of deregulation. In addition, improved personnel training is needed to enhance the effectiveness of financial institution personnel in meeting consumer needs. Not surprisingly, the American Express study recommended consumer education as a partial solution to the problems of deregulation and technology.

Based on a study of the impact of technological change on elderly consumers, Jensen and Chen (1985) concluded that information alone is not the answer; con-

sumers need to be taught how to use the information. Although this conclusion may appear intuitive, the challenges of effectively reaching the poorly educated, elderly, and poor populations are substantial (Eastwood & Swagler, 1982; Jensen & Chen, 1985).

### Adjusting to Technological Change

Hefferan (1981) observed that our economy is in transition, that economic uncertainty is expanding, and that the increasing complexity of our economic system and rapid technological change will result in economic, social, and environmental costs. However, Hefferan concluded that, in general, consumers are able to adjust to transition, uncertainty, and complexity. The inflationary period of the 1970's illustrated the ability of consumers to make decisions and to adjust to change. "The most important lesson we have had in family economics and home management over the past several years is that, over time, families learn and adjust remarkably well under conditions of economic change and uncertainty" (Hefferan, 1981, p. 23-24). Uncertainty is nothing new (Firebaugh, 1981, p. 31). The greater the uncertainty, the greater the need for management (Abdel-Ghany, 1981). The pace of change and the complexity of the marketplace added to uncertainty are the factors which make the future more intimidating.

"Changing to an information-based, uncertain and increasingly complex economy will thrust new decision making responsibilities on individuals and families and will increase their needs for professional assistance in these areas" (Hefferan, 1981, p. 24). Thus, Hefferan issued the challenge to develop programs that will assist families in using their creative resources to adjust to the rapid pace of change. In order to assist families we must be aware of trends and of how individuals interpret and adjust to change, which may range from refusal to acknowledge change to eager anticipation. "Some people regard uncertainty as a challenge and opportunity, others as a problem or difficulty" (Walker, 1981, p. 35).

Rapid societal and economic change can cause confusion regarding personal values. Thus, values analysis is a requisite skill, serving as a road map in planning and management. Walker (1981) emphasized that "today's important decisions are largely value based decisions" (p. 35).

Hogarth (1985) identified the issues of availability and access to information as concerns for many families and suggested that access to computers and computer based information and decision making tools be made available through public libraries. However, Hogarth failed to address the lack of skills and inhibitions that

will prevent many from using these services. Thus, educators and the industry need to work together to teach consumers to use technological tools. For some groups, particularly the elderly who have shown an aversion to automatic teller machines (Jensen & Chen, 1985), it may not be feasible to teach them to use ATM's, videotex, and home banking by computer. Numerous researchers (Hampton et. al., 1985; Jensen & Chen, 1985; "Americans," 1984; Widing & Talarzyk, 1983) have confirmed the reluctance of the elderly to adopt new technology.

### Opportunities for Educators

The message to consumer educators is clear. We need to keep abreast of technological changes in order to offer our students the best possible preparation for managing their financial resources. Simply teaching the basic concepts of financial management is no longer sufficient.

Strategies for taking advantage of change include education to equip consumers with the skills to use calculators or computers, reliance on a personal financial planner, or (for the majority of consumers who can't afford the other options) the default of relying on financial salespersons for advice. But there is no assurance that the salesperson even knows all the options available or is capable of explaining the differences and assisting the consumer in making an appropriate choice.

Hogarth (in press) provided examples of how professionals can assist consumers in these complex decisions through use of computer modules. Planning for retirement epitomizes the complexity of individual decision making and uncertainty about the future. Hogarth (in press) developed an interactive computer program to assist individuals in projecting their retirement needs. Despite the value of the program, there remains the need for individualized advice on how best to invest resources for a projected risk/return option. Although they are valuable tools for exploring complex alternatives, computers cannot replace human evaluation.

Hira and Fletcher (1985) recommended revision of the traditional content and methods of personal finance instruction, away from descriptions of financial products which change rapidly, to emphasize information processing and decision making skills. Because of the rapid pace of change and the fact that many consumers make major decisions such as car financing and mortgages infrequently, Hira and Fletcher proposed that educators teach how to choose and use a financial advisor. As the marketplace becomes increasingly complex, the pressure to rely on financial planners increases. Many

financial advisors are newly titled stock brokers and insurance salespersons, many of whom have passed the rigorous requirements to become Certified Financial Planners (CFP) and Charter Financial Consultants (ChFC) or have upgraded their skills through other training programs. However, anyone can claim to be a financial planner. The industry is currently working to initiate stricter qualification standards.

Education is a key element in helping consumers cope with technological changes in the financial services marketplace. Some instructors (Anderson, 1985; Holyoak, in press) have responded to the need to teach the use of personal computers, incorporating decision making strategies with learning to operate computers. Due to a smaller percentage of the population in formal education programs and to the retreat from consumer education in deference to the basics, innovative programs are needed to reach the majority of consumers.

### Research Needs

Hefferan (1981) and Firebaugh (1981) emphasized the need for research to determine how families respond to change. Exploration, refinement, and development of theory and models are necessary to assist home economists in meeting the challenge of assisting consumers in responding to technological change.

Hira and Fletcher (1985) listed five goals of further research: (a) identify the impact of technological change on consumers, (b) identify information systems that provide clear information, (c) identify specific changes that could enhance the usefulness of products, (d) identify needs and problems of consumers with special needs, and (e) assess the need for regulation.

### Public Policy Implications

In addition to helping consumers understand the new financial instruments, Morse (1981) emphasized the importance of participation in public policy decisions. Government regulation to provide consumers with the basic right to information is a partial answer to the dilemma of confusion spawned by technology.

Based on extensive research, Morse (1981) proposed Truth in Savings legislation as the solution to confusion in one area of the marketplace. Although Truth in Lending legislation advanced the position of consumers vis-a-vis lenders and was readily incorporated into credit transactions, the industry has been reluctant to support similar legislation to enable consumers to make informed comparisons between savings options. Morse's proposal would re-

quire that interest rates be advertised in terms of number of cents per dollar per day. Based on extensive studies Morse found that this was the most understandable way to communicate interest rate differences.

Hogarth (1985) identified a public policy issue which may arise when neighborhood branch banks are replaced by electronic banking (typically in low income neighborhoods), depriving the residents of convenient access to certain financial services. At the same time, deregulation resulted in the reduction in cross subsidization of banking services. As interest rates on savings became more competitive, financial institutions were forced to offer higher rates to attract and to keep high balance savers. No longer satisfied to leave large balances languishing in passbook accounts earning low rates and subsidizing small unprofitable accounts, customers with large balances demanded market rates. Consequently, many institutions charge monthly maintenance fees on low balance accounts and/or pay interest only on balances exceeding a certain threshold. Similar charges have been imposed on checking accounts, requiring high minimum balances in order to avoid monthly service charges. Thus, many low income consumers have been forced to close accounts. Efforts to address concerns regarding access to financial services have culminated in legislative proposals to impose lifeline financial services which would require institutions to offer no frills accounts (Scherschel & Quick, 1985). Partly in response to the threat of regulation, many financial institutions now offer no frills checking and savings accounts with no or low minimum balances and limited services which may require customers to use automatic teller machines rather than human tellers.

### Future Trends

Although consumers in debt can seek relief for their problems and advice on better management through credit counseling (usually restricted to large metropolitan areas) and the wealthy can pay for financial planners, large numbers of consumers are left in a void. Helmick (1985) identified the need for financial advisors to meet the needs of the majority of consumers. The major obstacle to developing this career path is the reluctance of consumers to pay for such services which they perceive they can obtain free from financial institutions ("Americans," 1984).

The expansion in financial planning and advising offers the opportunity for consulting and for developing a private practice. The most likely employment opportunity is as an advisor/educator with a large corpora-



tion providing services to all employees as an employee benefit. Financial planning for upper management is one of the fastest growing perks, but this merely duplicates the services that these employees could afford in the marketplace.

## Conclusion

Professionals can assist consumers in adapting to technological change and in shaping the direction of financial services through interdisciplinary research and collaboration in teaching and service. Researchers and educators should influence the industry to be more consumer oriented, and an effective way to make an impact is to become involved in the industry. Professionals on an academic year contract and those with sabbaticals can pursue summer fellowships with local financial institutions. The institutions could benefit from a consumer perspective in evaluating their services and personnel training, surveying customers, and writing informational materials. The professional relationship between the Association for Financial Counseling and Planning Education (AFCPE) and the International Association for Financial Planning (IAFP) is another example of industry-education cooperation.

The needs for research, theory development, education, and advising are evident. Whatever the role and skills of home economists, we all need to assess how we are serving our clients. Understanding technology, a positive attitude toward change, access to information and education, and the financial resources to participate in the technological revolution are key elements. Hira and Fletcher (1985) observed that rapid technological change, resulting in both benefits and costs for consumers, is unavoidable. Yet, despite the opportunities and benefits, many consumers may be left behind and suffer economic consequences (Hayes & Swartzlander, 1983). Educators and researchers are challenged to assess the impacts of the changes and to help consumers respond to new developments.

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# Food Irradiation Technology: How Safe Is It?

Mary Ann Cessna and Connie R. Rae

**The authors present the history and process of food irradiation and discuss it in respect to safety, nutrition, and economic considerations. Potential uses and consumer concerns are explored in terms of the question of overall safety of the process.**

The word *radiation* has always been capable of creating a feeling of dread, especially since the horror of Three Mile Island and Chernobyl. Though these fears are well-founded and should continue to raise public consciousness, radiation is not detrimental in every application. Microwave ovens, sterilization of surgical equipment, and routine dental x-rays are just a few examples of beneficial uses of irradiation technology.

The latest implementation of radiation is in food processing for protection of the quality, quantity, and safety of the food supply against contamination and spoilage. Food irradiation techniques have been in the research and development stages in the United States for over 30 years. Canada, the Netherlands, and the Soviet Union accepted food irradiation in the late 1950's. Currently 25 countries use this technology for one or more food items (International Atomic Energy Agency, 1984). By employing ionizing energy, irradiation treats food by exposing it to gamma rays, x-rays, or accelerated electrons for a specific amount of time (International Atomic Energy Agency, 1984). Food irradiation is comparable to heating and freezing in its effect and has potential as an innovative, advantageous method of food preservation.

This article will explore the history of food irradiation; define the process; discuss irradiation in terms of safety, nutrition, and economic considerations; identify potential uses; and explore consumer concerns to give consideration to the question of "How safe is it?"

## History

Discoveries involving the use of radiation processing have been recorded since the first of the century. In 1908 a technique using x-rays was developed for killing tobacco pests, and in 1920 a French scientist discovered that ionizing radiation could be used to preserve food (Lecos, 1985). However, formal food irradiation studies

initiated by scientists at the Massachusetts Institute of Technology did not begin until the 1940's. The government became aware of the process and enlisted the Natick Army Base to continue pursuing possible uses for irradiation (Dobkin, 1984). Radiation sources and processing equipment were not developed until the early 1950's ("Radiation preservation," 1983). A curtailment of studies and growth in the area of food irradiation occurred in 1958 when an amendment to the Food, Drug and Cosmetic Act defined irradiation as a food additive (Meister, 1982). But interest was renewed in the 1960's when the International Joint Expert Committee on Food Irradiation (IJEFCI), an impartial group of scientists, pronounced its acceptance of several irradiated foods, including wheat and potatoes irradiated within prescribed limits (Diehl, 1978). Even with this advancement, food processors were wary of investing large amounts of capital in irradiation facilities.

As concern over the safety of chemical food additives grew during the 1970's, food irradiation resurfaced as a possible alternative. Rising energy costs caused some alarm within the food industry and forced food processors to seek less expensive ways to preserve food (Wedekind, 1983). Although food irradiation was considered a viable choice, the controversy over its definition placed strict limitations upon its use. The Food and Drug Administration (FDA) defines irradiation as an additive, while the IJEFCI views irradiation as a "...physical process for treating foods and as such it is comparable to the heating or freezing of foods for preservation..." (Diehl, 1978). IJEFCI's position is that ionizing energy used to irradiate food passes through the food and does not remain within the food to become a part of the product. The FDA's position is that because irradiation affects the food item chemically it should be considered a food additive. Defining food irradiation as a food additive is much more restricting than if it is defined as a process, because additives not only must pass more rigid testing standards for safety but they must be declared on the food label (Wedekind, 1983). In 1981 the FDA responded to favorable international interest in irradiation of foods by publishing an "Advance Notice of Proposed Rulemaking," outlining possible actions to deregulate

irradiation processing of foods for human consumption (Kowek, 1983).

Scientific evidence attesting to the safety and wholesomeness of irradiated foods led to further legal acceptance of this process. In 1983 the FDA approved the use of irradiation to disinfest dried spices and seasonings, such as onion and garlic powders (Dobkin and Blair, 1985). In January 1985 the FDA proposed expanding the list to allow low-dose (up to one gray or 100 rads) irradiation of fresh fruits and vegetables to disinfest and to prevent spoilage. This proposal was finally approved in April 1986 ("Irradiation OK'd," 1986). Early in 1985 Senator Sid Morrison introduced a bill that legally redefined food irradiation as a *Food Process*. The Morrison bill, which is still pending, would establish a federal commission to coordinate currently fragmented food irradiation research and information exchange, encourage its private development, and promote public understanding of the safety of the process (Morrison, 1985). Although the concept of using radiation as a processing technique has not yet been generally accepted, in July 1985 the FDA approved its use for control of the trichinella spiralis bacteria in fresh pork (LaBell, 1986).

Labeling is another issue that needs to be addressed when reviewing the legalities involved in approving food processes or additives. The FDA identified the labeling requirements for irradiated foods in April 1986. The words *treated with radiation* or *treated by irradiation* and the international logo (Figure 1) must be present on the label of any irradiated food marketed ("Irradiation OK'd," 1986). A movement to eliminate descriptive terminology or to substitute the phrase *picowave processed* has been initiated by irradiation proponents since special labeling may create the impression that irradiated food is unsafe. Consumer groups are opposed to the word *picowave*, because it may mislead the public by using unfamiliar terminology. They advocate the use of the statement *treated by irradiation* in conjunction with the logo to avoid deception that may arise through utilizing an unknown symbol. The FDA will reassess its labeling directive for irradiation in two years. At that time they may choose to eliminate the requirement for descriptive

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labeling in favor of the international logo alone ("OMB," 1986).



Figure 1. International logo.

### Definition of the process

Food irradiation involves exposing foods to gamma rays with cobalt-60 and cesium-137, the most common and approved sources for food and industrial processing (Figure 2). These radioisotopes are inserted into 18-inch-long stainless steel tubes called pencils which are loaded into the bottom of a 25-foot-deep pool of water inside a shielded chamber. When the food is moved through the chamber on a conveyor, the radiation source is raised above the water so that everything within the room is exposed to the gamma rays (Dobkin, 1984).

[recommend placing Figure 2 here]

When food is exposed to gamma rays, the energy that is produced slows or halts cell division. Bacteria, molds, yeasts, and other disease-carrying organisms that cause food spoilage can be inhibited or destroyed, depending on the intensity of the radiation (Dobkin, 1984).

### Use and Dosage of Irradiation

Irradiation doses are measured in rads which is the abbreviation for *radiation absorbed dose*. In more recent years the term gray (Gy) has also been used to describe dose levels; 1 gray equals 100 rads (Lecos, 1985). A gray is defined as the amount of energy absorbed by a food from ionizing radiation as it passes through in processing. Varying doses of ionizing energy can be used for different purposes in food preservation. For example, a relatively low dose of radiation 0.05 to 0.15 kilograys inhibits sprouting of potatoes and onions, while levels of 0.25 to 1 kilogray delay ripening of soft fruits and vegetables, such as strawberries, mushrooms, and other perishables (Dobkin and Blair, 1985). The radiation processing of food causes only a very slight increase in its temperature. For this reason, food irradiation is sometimes referred to as a *cold* process for killing microorganisms in food. With such a small temperature rise associated with radiation, adverse changes in the food such as altered flavor, odor, color, and texture are minimized. The irradiated food retains more

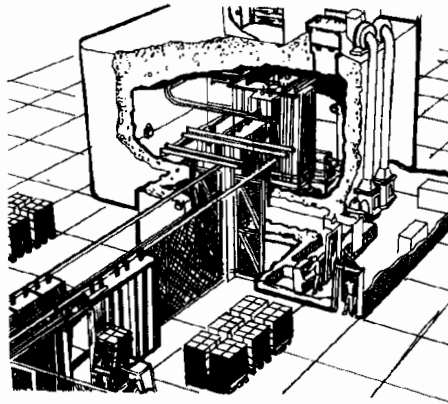


Figure 2. Commercial irradiator

of the appearance, taste, and quality characteristics of fresh raw food. This cold feature also makes the process attractive for heat-sensitive aspects of food processing, such as nutrient retention ("Radiation preservation," 1983).

A low level of irradiation would be exposure up to one kilogray (1000 grays). This dosage would be used for inhibition of sprouting, insect disinfestation, and delay of ripening in fruits and vegetables. Medium levels of irradiation are those between 1 and 10 kilograys and would be used for the extension of food shelf-life, the reduction of microbial load in food products, or the improvement of technological properties in foods. High dose irradiation, also termed radappertization, is exposure between 10 and 50 kilograys. This level would be used in commercial sterilization or for the elimination of viruses (International Atomic Energy Agency, 1984). Food irradiation involves low level doses in most cases.

### Safety

The usual procedure for determining toxicity of a food additive is to add the food to the diet of test animals in quantities far above those normally used in practice, to find the maximum quantity that produces no observable adverse effect, and to divide this quantity by a safety factor (usually 100) to obtain the amount allowed in the human diet. Unfortunately, this procedure is inappropriate for determining whether radiolytic products are toxic and for evaluating their safety in human diets, because neither the food processed with ionizing energy nor the radiolytic products can be added in large excesses as in classical toxicological research. Experiments which expose several or all components of the test diet to practical doses of ionizing energy, avoiding nutritional imbalances, have been conducted to compensate for this problem. A study in China had human

volunteers consume balanced diets of which 60-65 percent of the foods had been processed with ionizing energy. A broad spectrum of toxicologic tests revealed that irradiation posed no adverse effects during the 15 weeks of the study (Council for Agricultural Science and Technology, 1986).

Feeding experiments, including human and animal subjects, which involved diets including irradiated foods in feasible quantities have been initiated in the United States and other countries. These studies investigated lifetime and generational effects of animals fed the processed foods. The researchers looked for the effects on mortality, body weight, food consumption, behavior, pathologic changes, blood count and hemoglobin, urine composition, reproductive performance, birth defects in offspring, and genetic changes. Additional studies have been conducted with radiolytic compounds added in amounts far exceeding those normally consumed. The results of these investigations, accumulated over a period of 30 years, indicate no confirmed evidence that consumption of foods processed with ionizing energy has adverse biological effects (Council for Agricultural Science and Technology, 1986).

In 1980 an international group, the Joint Expert Committee on the Wholesomeness of Foods, reviewed the existing data and recommended general approval of food treated with doses of irradiation up to 10 kilograys. The committee deduced that food treated with gamma rays to that level posed no health problems and required no further testing for wholesomeness (International Atomic Energy Agency, 1984), because (a) no toxicological problems exist due to the use of irradiation, (b) irradiation is a process with predictable and uniform results, and (c) the nutritional value of food treated with this low level of irradiation is not impaired ("Radiation preservation," 1983). Opponents of irradiation processing continue to doubt such findings. Concern has been raised about the *radiolytic* or chemical changes that can occur in foods that have been irradiated. Unwholesome material commonly detected is found in other non-irradiated foods; however, a few new substances called *unique radiolytic products* (URP's) have been identified through sophisticated techniques. Public interest groups are concerned about URP's since the long-term effects on humans who consume irradiated food have not been established yet. Short-term animal studies provide varying results, and experts have been critical of the experimental designs of this research. FDA addressed the URP's issue and established that, based on currently available studies, the chemical differences between irradiated and non-irradiated foods are "too small to affect the"



safety of the foods" ("Food irradiation: watch," 1986).

### Nutritional Aspects

Foods preserved by radiation often are superior nutritionally to those preserved by other means. Proteins and essential amino acids are not destroyed, and in some cases more vitamins are retained. Pork demonstrates this characteristic since it retains more thiamin when irradiated than when frozen (Dobkin and Blair, 1985). Because irradiation is a cold process, natural food juices are left untouched. The food can be packaged without any liquid, thus preventing leaching of the water soluble nutrients ("Radiation preservation," 1983). At the medium dose level used for fruits and vegetables, irradiation does not significantly affect the nutritional quality, caloric value, pigments, sugars, fats, proteins, or enzymes. Negligible decreases in niacin, thiamin, riboflavin, and beta-carotene have resulted due to the utilization of ionizing energy. Vitamin C is more radiosensitive than other nutrients, and its losses can range from 1-95 percent. The decreases of ascorbic acid depend upon many variables including "commodity, cultivar, irradiation dose, and duration and temperature of storage" (Kadar, 1986).

Food irradiation is not a panacea nor is it considered to be a suitable food preservation method in all instances. A California study indicated that low level treatment yielded changes in the smell and texture of oranges and grapefruit. Increased development of brown blemishes four to six weeks after harvest also were noted in these fruits ("Irradiation hastens," 1985). Irradiation is not an appropriate treatment for preservation of dairy products either, because it produces off-odors in these items (Garland, 1985). Such findings substantiate the need for specific foods to be tested before irradiation is used as the processing method.

### Economical Considerations

The initial cost of an irradiation facility is high; however, the overall results more than compensate for the original investment. The cost of installing and operating an irradiation facility to control trichinosis in pork ranges from 0.4 cents per pound for plants slaughtering 2,000 hogs per day to 0.1 cent per pound for plants slaughtering 8,000 hogs per day. That compares to 1.7 cents per pound for freezing (Dobkin and Winston, 1983).

Irradiation can simultaneously perform a number of functions on a wide variety of foods. For example, processing activities to disinfest and to extend the shelf life of food could be combined at one facility; thus,

there would be a substantial savings of time and money (Dobkin, 1983).

Several comparative cost estimates appear to give irradiation an economic edge over other processes. Irradiation was found to be 70 to 80 percent less expensive than canning (Dobkin and Winston, 1984). In addition, radiation appears to cost only about half as much as conventional fumigation techniques (Wedekind, 1983). Preliminary estimates show that using radiation for fruit would cost only about 0.0014 cents per processed pound (Dobkin and Winston, 1984).

Irradiation could also benefit the American farm economy by allowing farmers to preserve surplus crops, store them until they are needed, and then sell them as ingredients or provide them to developing nations (LaBell, 1986). Because approximately 30 percent of the annual world food supply spoils, irradiation could significantly reduce this costly waste (Dobkin and Blair, 1985).

### Potential Uses and Applications

Table 1 summarizes the current uses of irradiation for treatment of both food and non-food items. Irradiation technology is endorsed by the American Medical Association for sterilizing surgical equipment and instruments, as well as for the treatment of some cancer patients (Swientek, 1985). It is used also to decrease the number of microbes and pathogens in foods and, in some cases, to sterilize foods for patients whose immune systems have been rendered fatally vulnerable to otherwise benign organisms found in everyday foodstuffs (Aker, 1984).

Other potential uses of radiation await FDA approval. Three pending petitions include (a) low-dose irradiation of poultry to control Salmonella and Campylobacter bacteria, (b) low-dose irradiation of fresh and frozen seafood to control spoilage bacteria and/or pathogens and parasites, and (c) high-dose irradiation to produce shelf-stable sterile foods. This last petition would make it possible to produce gourmet meals that could compete with frozen dinner entrees. If irradiated, these foods would not only be shelf-stable (require no refrigeration but would be more juicy, because they are not overcooked. The current practice of using excessive sauces and gravies would be eliminated. Energy costs would be reduced, because there would be little or no need for refrigeration or freezing during storage (LaBell, 1986).

Irradiation kills insects, so it has the potential to replace highly toxic fumigants, such as ethylene dibromide (EDB) which was removed from the Environmental Protection Agency's list of approved chemicals

TABLE I

### Practical Uses of Irradiation

1. Destroy trichinae in pork.
  2. Destroy botulinus and salmonella in red meats and poultry
  3. Extend the shelf life of perishable fruits, vegetables and seafood
  4. Increase the availability of perishable fruits, vegetables, and seafood
  5. Increase the juice yield of wine grapes
  6. Kill insects in grains
  7. Kill insects in fruits and spices
  8. Inhibit sprouting in potatoes and onions
  9. Delay ripening of fruits and vegetables
  10. Produce sterile foods and supplies for hospital patients
  11. Sterilization of medical supplies
  12. Displacement of chemical additives as preservatives to extend shelf life
  13. Convenience
- (Dobkin, 1984)

in September 1984. Alternative treatments, such as hot-water treatment for papayas and cold-air treatments for grapefruit, have resulted in some problems which make the foods undesirable (Kadar, 1986). Therefore, irradiation (though not without disadvantages) seems to offer a viable solution to the ever-present pest problem.

Another important benefit would be the displacement of chemical additives used as preservatives to extend shelf life. Ham, bacon, and luncheon meats could be processed without the use of nitrites that form nitrosamines, suspected carcinogens (Dobkin and Blair, 1985).

### Consumer Attitudes and Education

Market polls to determine consumer reactions to food irradiation have revealed a highly negative response from the public. One private poll found that more than one-third of the respondents said they would never use products treated with radiation. All other people responding to this poll said they did not have enough information to make a judgment ("Irradiation OK'd," 1986).

Consumers equate food irradiation with numerous problems. One concern involves the use, transport, and disposal of radioactive materials needed to irradiate foods ("Food irradiation: a management," 1986). Some people believe that the government is rushing the radiation approval process, because it is a potential way of using cesium-137, a byproduct of spent nuclear fuel (Lecos, 1985). After reviewing the extent of required federal safety tests, this concern significantly diminishes. Some investigators have speculated about the possibility of creating new strains of irradiation-resistant, harmful organisms through the process;

however, they have determined that this is a very remote possibility (Swientek, 1985). There is concern about the scarcity of knowledge available on the URP's present in irradiated foods. This objection appears to be valid since long-term human effects have not been researched sufficiently at this time to guarantee absolute safety of URP consumption. This argument can also be applied to other common food processes which are accepted worldwide. Ingestion of fried foods, for example, has been associated with higher incidence of some types of cancer, but this food preparation technique continues to be popular. Based on current knowledge, URP's are not considered a health hazard to those consuming irradiated food (Wedekind, 1983). In fact, many of these same radiolytic products have been found in boiled, fried, baked, and microwaved food in even greater quantities than in foods that have been irradiated (Swientek, 1985).

One final concern facing the public involves the identification of irradiated foods. Since these products will retain their fresh appearance over an extended period of time, it will be difficult for consumers to determine which foods are fresh and which are irradiated. Fruits and vegetables, whether irradiated or not, will lose some nutritional value over time. Therefore, shoppers may be purchasing food which contains lower nutrient quality without realizing it. This problem also affects food items being imported from other countries. Currently, the Food Safety and Inspection Service (FSIS) is not able to distinguish between fresh and irradiated products. In an attempt to remedy this situation, FSIS has awarded the National Bureau of Standards a \$200,000 grant to determine if it is possible to develop a testing methodology which will enable FSIS personnel to distinguish between fresh and irradiated food. The FDA suspects that some of the shrimp and frog legs imported into the United States have been irradiated, so an effective testing procedure would eliminate potential violations of present standards ("Irradiation approval," 1986).

Many consumer fears can be alleviated through effective education. A study conducted in the Netherlands in the early 1980's (Swientek, 1985) used in-depth interviews of Dutch housewives to collect information from consumers to aid in planning and implementing effective food irradiation education materials. Answers were collected to various questions regarding why certain products were chosen over others, whether labels were read when purchasing food items, and why specific foods would not be eaten. Information about the emotional and

psychological concerns respondents had toward irradiated foods was also gathered. The label *irradiated food* stimulated a reaction of fear which was caused by the consumer associating irradiation with cancer. The researchers then gave the group a list of eight attributes or facts about irradiation in an attempt to determine whether education would have an effect on consumer attitudes.

After the benefits of irradiation were presented to the participants, they were asked to respond again to questions regarding fears associated with irradiation of foods. Results indicated that concerns decreased tremendously and that the decline was attributed to consumer education. The report also suggested that consumers are receptive to learning about irradiation and have concerns over its safety primarily because they lack sound information about the process (Swientek, 1985).

### Conclusion

Irradiation of food products could have many benefits for consumers in this country. By increasing the use of preservation techniques which provide a safer, more wholesome and convenient food supply, it is possible to reduce much of the waste that is currently the result of food spoilage.

How safe is food irradiation technology? Extensive research has shown that the proper use of this technique does not present a health hazard at this time. Although further study of the long term effects of irradiated food is indicated, current evidence indicates that consumers have little to fear from this process of obtaining high-quality food products in greater varieties.

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Ms. Hittman is Northwest Home Economics Coordinator for Cooperative Educational Service Agencies (4,8,9,10,11,12) in Wisconsin and participant in a curriculum and staff development project of the Wisconsin Department of Public Instruction.



### Kappa Omicron Phi/Omicron Nu Consolidation Questionnaire

Consolidation will require an affirmative vote by chapters and/or delegates to Conclave. Because constitutional changes are not made by the membership at large, your input is needed to prepare a document for voting. The leaders have identified issues that may have special concern to you. Please review the issues and indicate your choices by prioritizing the alternatives (1=1st choice, etc.). Feel free to write comments or ask questions. Return to P.O. Box 247, Haslett, MI 48840-0247.

Name \_\_\_\_\_ Telephone \_\_\_\_\_

Address \_\_\_\_\_

I am a member of  Kappa Omicron Phi,  Omicron Nu,  Phi Upsilon Omicron.  
Status:  Undergraduate Student,  Graduate Student,  Faculty,  Adviser,  Alum

#### Prioritize alternatives by indicating FIRST CHOICE (1), SECOND CHOICE (2), ETC.

**1. Issue: Name Change**

**Facts:** The Kappa Omicron Phi and Omicron Nu officers are committed to establishing an identity for the new organization that reflects the goals of scholarship, leadership, and research and implements the intention to consolidate rather than to merge one into the other. The Plan for Consolidation should:

- a. Recommend a name selected by a committee of student, alumni, and faculty members.
- b. Recommend a name selected by campus and alumni chapters.
- c. Recommend a name selected by vote of dues paying members.
- d. Recommend a name selected by National officers of both groups.
- e. Other (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

A name to be considered is \_\_\_\_\_

**2. Issue: Identification of Field of Study**

**Facts:** While the profession still carries the name of Home Economics, academic programs have adopted a variety of names to identify the specialties within our field. Identity of the field of study is not only important to recruitment of members but to public awareness of the organization. The Plan for Consolidation should:

- a. Preserve the present identity of Home Economics.
- b. Identify the field as Home Economics/Human Ecology.
- c. Identify the field by a broad, comprehensive list of specialties.
- d. Other (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3. Issue: Constitutional Provision for Election of Officers**

**Facts:** The active members of campus and alumni chapters of Kappa Omicron Phi presently elect officers by mail ballot; an appointed Nominating Committee, representative of five regions of the membership, selects nominees. All dues paying members of Omicron Nu elect officers by mail ballot; an elected Nominating Committee selects nominees. The Omicron Nu process requires significant financial resources. The Plan for Consolidation should:

- a. Authorize the campus and alumni chapters to elect officers by mail ballot—with each chapter entitled to one vote plus one vote for every 50 members in the chapter.
- b. Authorize the Conclave delegates to elect officers at Conclave.
- c. Entitle every dues paying member to vote for officers by mail ballot.
- d. Other (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4. Issue: Fellowship Monies**

**Facts:** At the end of the 1985-86 fiscal year, Kappa Omicron Phi had more than \$50,000 and Omicron Nu had more than \$20,000 in restricted funds for fellowships. The Plan for Consolidation should:

- a. Combine funds and identify uses for restricted and unrestricted purposes in encouraging scholarship and research.
- b. Maintain separate funds as endowments and keep name of organization on award.
- c. Maintain separate funds as endowments and make awards for a specified period, after which the funds will be transferred to the new society.
- d. Other (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**5. Issue: Life Subscription Alternatives (FOR KAPPA OMICRON PHI MEMBERS ONLY)**

**Facts:** The Kappa Omicron Phi *Distaff* life subscription program terminated in 1969, but the fund to maintain approximately 3500 life subscriptions was exhausted long ago. The Plan for Consolidation should:

- a. Entitle each member who presently holds a life subscription to a free 10-year subscription with annual dues payment.
- b. Entitle each member who presently holds a life subscription to a free 5-year subscription to *Home Economics FORUM*.
- c. Abolish life subscriptions.
- d. Other (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**6. Issue: Life Membership Alternatives (FOR OMICRON NU MEMBERS ONLY)**

**Facts:** The Omicron Nu Life Membership Endowment Fund of more than \$110,000 is sufficient at this time to maintain annual dues obligations for life members, but it is not clear that this fund can maintain future dues obligations as intended. For this reason, this membership option was terminated in 1965. The Plan for Consolidation should:

- a. Transfer the Life Membership Fund to the Development Fund (dues and subscription fee payable annually).
- b. Entitle each Omicron Nu life member to a 10-year free membership and *Home Economics FORUM* subscription.
- c. Entitle each Omicron Nu life member to a free life membership without subscription.
- d. Other (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please suggest issues of paramount importance to the future of your honor society. These will be given careful consideration by leaders and task forces in developing the Plan for Consolidation.

What additional information do you need before you can form an opinion on the subject of consolidation?



