Appendix A
SRI's Visibility Problem

For several reasons SRI has had a bit of a visibility problem over the years. First, and most importantly, contract research by its very nature lets those you are working for determine whether results are disseminated publicly and, if so, the extent of that dissemination. Sponsors may give full and open credit to SRI for the work done, including the opportunity to publish, they may simply keep the results secret, or they may attribute whatever advancement to themselves…all of which may be legitimate. Second, perhaps with the exception of professional journals, the Institute often chooses not to publicize even where it was free to do so. Clearly, an increased attention to the commercialization of its intellectual properties feeds the tendency to not publish at all. Finally, there is the lack of distinction between SRI and its parent University that sometime gets blurred. As a result, few—even within SRI—were or are fully aware of the scope of its achievements. Some examples of SRI's visibility problem follow.

Automated Banking

The December 1999 issue of the *Proceedings of the IEEE*, the main publication of the world's largest professional electronics group, takes a retrospective look at a "classic" 1972 paper, the "Social Role of Computer Communications" by IEEE Fellow, R. M. Fano:[A]

> A major force that has led to the use of computers in the operation of society is the growing volume of transactions of various types that must be handled. For instance, the Bank of America was led, in the middle of the 1950's, to pioneer in the use of computers by the realization that manual handling of checks would have required, in the foreseeable future, the entire adult population… (p. 2130)

On the televised ACM Computer Bowl in 1994, the Toss Up Question 7 was:

> We are all familiar with the term ATM standing for Automatic Teller Machine. But way back in the 1950s, the Bank of America installed one of the first computerized banking systems, built by GE. It was called ERMA. What did the letters ERMA stand for?

The answer, which was correct, was: Electronic Recording Machine, Accounting.

Both instances illustrate SRI's long-standing visibility problem. For it was SRI that formulated all the design concepts for ERMA, gave it its name, and first built and demonstrated the system. For the banking industry, the results of SRI's work were momentous: not only did ERMA become one of the world's first large dedicated computers, but it changed forever, procedurally as well as mechanically, fundamental banking processes. SRI's role in the work was not revealed, primarily because the computer-based process was so groundbreaking that the Bank of America wanted it to be kept private. SRI's dedicated work over 4 years to demonstrate the concept before handing over its manufacture to GE was acknowledged only fleetingly. Were it not for a Harvard business case study and a resulting article in the *IEEE Annals of Computing* in 1993, SRI's role might have been ignored forever.[B] Even this limited exposure didn't alter the above lack of awareness.

Personal Computing

Of the hundreds of accounts of the beginning of personal computing, most place its origins at Xerox's Palo Alto Research Center, at Apple Computer, or at one of several small companies that were the first to try to develop hardware profitably. However, SRI defined and demonstrated many of the original concepts defining and enabling personal computing in the mid- to late 1960s, before either Apple or the Xerox Center existed. Only within recent years have its foremost visionaries, Doug Engelbart and a few members in his SRI laboratory, begun to receive recognition. Even then the confusion with Stanford University often arises just as it normally does with the

first computer network transmission in 1969 between UCLA and SRI, which is often attributed to the university.

Drug Discovery

The Web page of the Walter Reed Army Institute of Research (WRAIR) makes the following statement about the malarial drug halofantrine:

> "discovered by WRAIR, halofantrine underwent preclinical and clinical development in our department…. Halofantrine was approved in 1996, and since then, the drug has been used by millions of people for the treatment of falciparum malaria."[C]

While it may be within a sponsor's prerogative to make such claims, halofantrine was discovered and developed in SRI's Life Sciences Division between 1965 and 1975 in work for WRAIR funded through the U.S. Army Medical Research and Development Command.[D] The Army needed a new drug for use in Southeast Asia because of developing resistance by the falciparum form of malaria to the existing drug, chloroquine. SRI also invented a modified form of halofantrine, called desbutylhalofantrine, which was SRI's original first choice for WRAIR. That drug has fewer side effects, but is still in clinical trials. The Army claims to have discovered that drug as well.

Economic Development

India's National Council of Applied Economic Research (NCAER) is that country's most authoritative source of economic and social information. Working in partnership with both the Indian government and its private sector, and in cooperation with national and international institutions, it has been compiling the information needed to understand India's economy for 35 years. An account of its genesis on its Web page mentions that this nongovernment research center was "founded in 1956 by the Ministries of Industry and Finance, Government of India in cooperation with the Ford Foundation." Had the whole story been told it would have indicated that NCAER was the idea of SRI's Dr. Eugene Staley who went to India under Ford Foundation sponsorship to help revitalize the Indian economy. Finding that the country had no information to use in assessing its economic condition or to gauge progress, he proposed the SRI-like research center, calling it NCAER. Similarly, SRI designed the National Institute of Small Industry Extension Training to train small business owners to help build India's middle class. Both institutions are vital and influential today, but SRI's essential role in development has disappeared from the official history.

The Ubiquitous Digital Fax Machine

While electronic mail was struggling to emerge into the mainstream information flows of the 1980s, many were surprised by the rapid growth in sales of the facsimile machine. Its digital version was fast, cheap, and increasingly omnipresent. One company that helped lead that surge was the Japanese office equipment and imaging company Ricoh. With some justification, it assigns the first digital fax transmission to its RIFAX 600S machine in 1973, and claims to have invented the unit.[E] But, once again, the first machine was built at SRI under a 1970 contract with Savin and CBS; Ricoh subsequently acquired the rights to the machine. SRI had worked with other providers of optical scanners, compression algorithms, and modems to design and build that first digital facsimile machine.

Endnotes

[A] The retrospective view appeared in the *Proceedings of the IEEE*, 87(12), 2130-2135, December 1999, and the original paper was in the same journal, 60(11), 1249-1243, November 1972. Neither mentions SRI.

[B] A. Fisher and J.L. McKenney, "The Development of the ERMA Banking System: Lessons from History," *IEEE Annals of Computing*, 15(1), 1993.

[C] Retrieved February 16, 2000, from http://wrair-www.army.mil/depts/pharmacology/Drugs.htm

[D] W. T. Colwell et al., *Journal of Medical Chem*istry, Vol. 15, 1972, p. 77.

[E] From an interview of Jim Ivy, President of Ricoh (USA) Products Group, by the *Digital Times,* September 5, 2000. "Ricoh…created the first digital fax machine, which was a Ricoh invention."