In less than one lifetime the technologies of electronic communication and computing have emerged, advanced, and coalesced. Initially the fields developed separately, constituting recognized independent disciplines. Great scientific effort went into each, with results that have fueled manifold multiplication of the Gross Domestic Product of developed countries.

Now, on the threshold of the 21st century, the merging capabilities of communication and computing surpass most of the unfettered dreams of the mid 1900’s. But, the benefits are not easy for humans to reap. More and more, a central focus is on natural communication with machines---using modalities comfortable for the human---sight, sound and touch. An ideal is communication replicating that between humans, but for the foreseeable time this complete ideal may remain on the horizon. Nevertheless, machine comprehension of human-generated information in the visible, auditory and tactile domains is advancing apace, as is the ability of the machine to generate responses in the same domains. Just as the mouse and icon-based software liberated computer users from many tyrannies of the keyboard, natural voice communication, gesture recognition, and automatic scene processing will lead to enhanced freedom and greater utility in communication and computing. This report draws a brief perspective on this outlook.

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