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VIRTUAL CO-LOCATION: TECHNOLOGY DIRECTIONS ARE FOCUSED ON MASLOW'S HIERARCHY

Frederick Winslow Taylor got the industrial age started by transforming manufacturing, changing the way people work with each other from “cottage” to “repetitive” production. This led to optimizing methods for group interaction to produce an optimal production result. Everything speeded up. There was a great demand for everyone working in industry to do it faster and at lower cost. The need for speed drove the creation of labor unions to insure that the tasks placed on individuals and groups were reasonable. Between “Taylor Principles” and “Union Principles,” a great wave of organizational research began.

Since the 1920s organizational scientists have been studying the interactions of humans in groups. There is a great deal of research on the subject. Nadler, Hackman, Lawler, and Khandwalla focused on *the dynamics of individuals in groups* and on *the dynamics of both individuals and groups in relation to tasks*. Maslow focused on *individuals* and their specific needs. His findings, most notably his “Hierarchy of Needs,” were easier to communicate and of more interest to a wider audience. For the purposes of R&D teams, and for any type of “project team,” the work of the first four scientists is of much greater interest. For example, this early research found that the optimal size for a team is six people; groups larger than six individuals will naturally divide themselves into two or more groups. And there are a good deal more gold nuggets in the work of the organizational scientists of the 1920s and 1930s that should have a bearing on the technology directions of today. Subsequent research over the last eighty years has done little to overturn the findings of early organizational research pioneers, but much of this knowledge is being overlooked.

In the 1960s, as commercial transportation was becoming commonplace, the way people interacted with each other in relation to their assigned tasks was again in focus. Factories and businesses were growing larger to achieve economies of scale. Mergers and acquisitions were becoming commonplace. Computerized methods were emerging in the workplace. People were more mobile and the nature of the way they performed tasks was changing again on a macro scale. The next big jump in the need for speed was upon us. Tom Allen at MIT began investigating how often individuals interact based on their distance from each other. His findings indicate that people at a distance of greater than ten meters almost never interact with each other.

In the 1990s, as personal productivity computers became mainstream and the world became a global village, the nature of the way people performed work was changing profoundly once again. More speed was needed. Once industrial production costs were minimized in the 1980s, the largest amount of unproductive time and cost remaining in industry was now in the professional and administrative ranks. This is the realm of R&D, product development and project-based activities, which are the targets of what we today know as “Virtual Co-location.” Office furniture manufacturers were highly focused on workgroups and teams, optimizing office layouts and communication systems for maximum productivity. AT&T offered us the 150-foot rule: where team members are located more than 150-feet apart, communication decreases by 80%. Steelcase offered 50-feet as the maximum distance that any two individuals working on a project team or workgroup should

be from each other. My company did a proprietary benchmarking research project for a client that had an extraordinary need for collaboration, an early adopter of virtual collaboration technology. In the early 1990s there were already over 300 different companies focusing on some 50 different approaches to virtual collaboration.

Across all of the research, the complete 360-degree, three dimensional environment surrounding any individual and the resultant visual and aural experiences received by that individual, has been shown to correlate with how individuals interact and perform in relation to each other and in relation to tasks. Most of the virtual co-location technology today is not trying to capture the environment of the individual in their workplace, but rather is limited in focus to the individual in relation to the group or to the individual in relation to the task. We have been taking pictures of each other since the 1800s. Today, we are still focused on taking pictures of each other and of documents. The needs of the individual drive our technologies. Today's virtual technologies are mostly Maslow. We need more Nadler, Hackman, Lawler and Khandwalla.

In the 1860s, President Abraham Lincoln had only 125,000 words to choose from in the English language. President Bill Clinton now has over 600,000 words at his disposal. So do the suppliers of the software that we use every day. As is proper in business, vendors pick the words that will create excitement, entertainment and sizzle. Proximally located, closely located, physically co-located, video and audio conferenced, interactive webcasted, virtually co-located, and real time collaborated are terms that send chills of excitement down the spines of top managers. Available technologies are clearly adding to the effectiveness and efficiency of the workplace, but there may be opportunities for suppliers of these technologies to incorporate the existing wisdom of past organizational scientists.^P_D

To contact Brad Goldense, call 781-444-5400, e-mail blg@goldensegroupinc.com, or check out his website - www.goldensegroupinc.com

Editorial Staff

Alex Cooper

Publisher
alex@roundtable.com

David Vermette

Editor in Chief
david@roundtable.com

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