SCOPE
Senior Consulting Program for Engineering

Team 4 - MITRE

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An Audio / Visual Connection Augmented with Metadata

Goal

The goal of this project was to design and prototype an intelligent physical space that sells a vision of the future to The MITRE Corporation by the end of the school year. The demonstration addresses two main problems identified at the beginning of the academic year: supporting **spontaneous collaboration** and stimulating **inter-office relationships.**

Spontaneous Collaboration

Spontaneous interactions and periods of reflection occur frequently, yet are not effectively supported in many of the places that they originate. Impromptu exchanges can take place in environments such as hallways, break rooms, and other informal meeting spaces; however, these spaces do not actively encourage such spontaneous interactions/periods of reflection nor are they adequately equipped to support them. It is possible that knowledge, agreements, and ideas that are produced can be lost or remain in the noise. Exchanges among larger groups are even more hindered than paired meetings. As a result, excitement and ideas are lost, valuable synthesis is wasted, and occupants of surrounding offices can be disturbed by larger groups congregating in popular locations.

Intercampus Relationships

It's difficult for MITRE employees to form strong working relationships with people from other MITRE campuses that are relevant to projects they are working on. This is because distance exasperates issues in communicating complex data, it increases activation energy for interactions, and it inhibits spontaneous interactions. As a result many negative consequences can follow: work could be duplicated, easy-to-answer questions go unasked, and people with relevant knowledge could go undiscovered. On team projects, collaboration turns into task delegation, feedback on work-in-progress can take too long, and competitive social cliques and "us versus them" mentalities develop.

Our Solution: Vision

• Communication technologies often create barriers to interpersonal connections
• Spontaneous interactions, on the other hand, are effortless to enter and more comfortable to end because neither party has a vested interest in a particular outcome
• Our product bridges distance to bring coworkers face to face in their down time
• Builds stronger relationships and makes it easier to share knowledge and utilize expertise
• Always-on, non-invasive video wall connects two users anywhere on two of MITRE's campuses
• Recognizes users as they approach
• Determines probabilistically with whom to connect them
• Points out unusual connections and common ties to capture users' attention and spark mutual interest in each other, providing the seeds of an engaging conversation
• Spontaneous connection: guided topical conversation can lead to resolution of an issue, arrangements for a future meeting, or quick hello-goodbye.

Our Solution: Demo

• Transparent rear-projection touch screen
• Identifies location of user's face and draws floating tags around image of head
• Tags contain information about other party in the communication, such as name, current projects, interests both users have in common
• Basic user interface makes references to features that would be in the full version: follow-up methods, virtual whiteboard, option to add other user to various online social networks

CIRCA

Attracting Attention: The "Spark"

Our system might have novelty appeal for a short period of time, but to continue to encourage interpersonal interactions it will need a lasting means of attracting its users. We came up with several ways our product might entice a potential user to step up to the wall and engage in conversation. In the few seconds an employee is walking by, our system should convey a compelling common element between that employee and the user on the other side of the connection. Things that might spark a conversation include upcoming conferences in the same location, work-related blogs which both users read, or a technical problem one user is working on where the other user has experience.
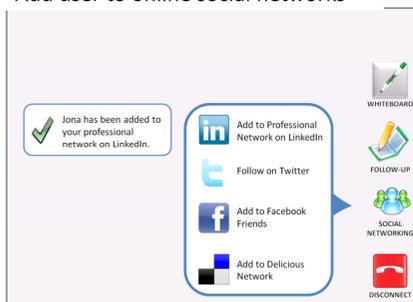
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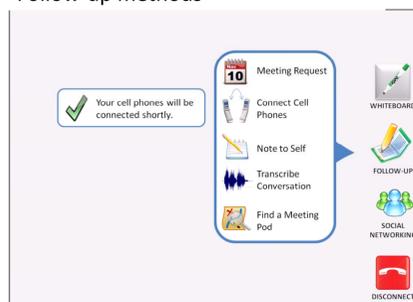
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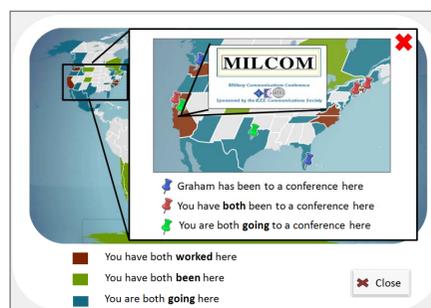
Shared work-related blogs
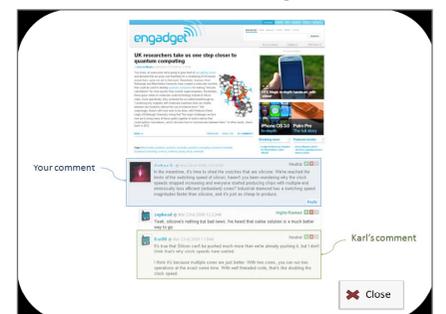
Demo: Other Options

Add user to online social networks

Follow-up methods

Acknowledgements