

Leveraging Peer-to-Peer Computing Technology in Supply Chain Management

CIFE Technical Advisory Committee Meeting

April 5, 2001

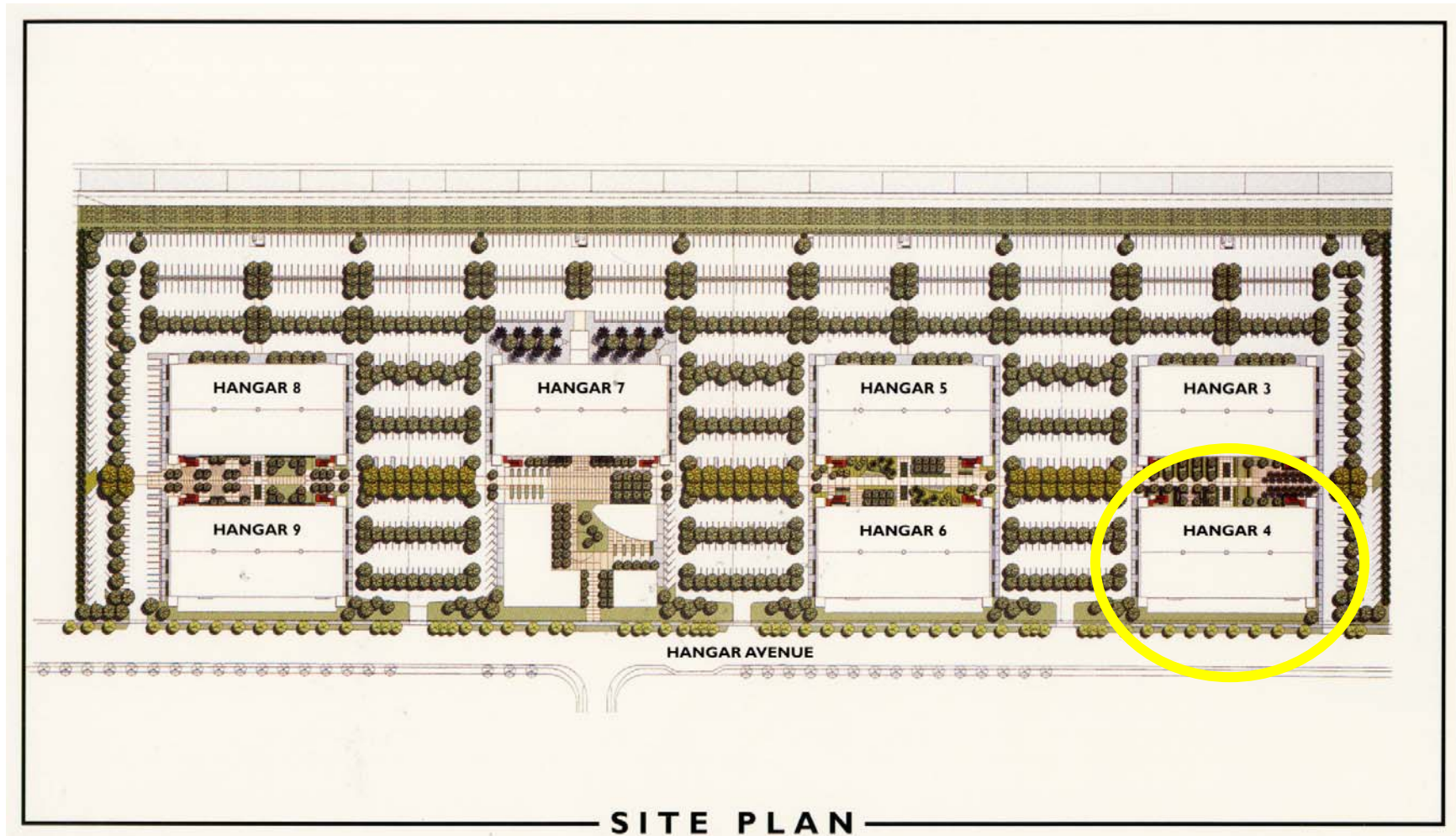
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Outline of Presentation

- Motivating Case
- Problems in supply chain management
- Peer-to-Peer computing
- Research questions
- Proposed framework
- Research Methodology
- Deliverables

Motivating Case



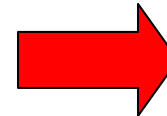
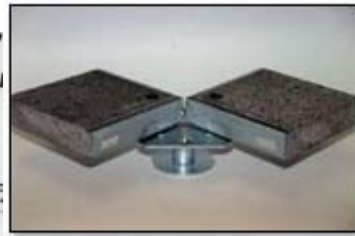
Motivating Case



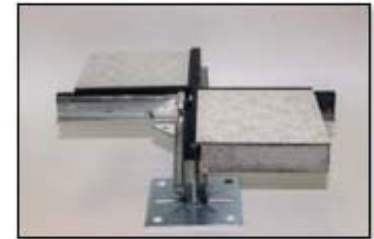
— NORTH & SOUTH VIEW —

Motivating Case

Tec-Crete I



Tec-Crete II



June 23, 2000
505 Hangar Ave
Novato, CA 94949
Attn: [REDACTED]

Re: Alternate Floor Panel for Bldg 3

Dear [REDACTED],

[REDACTED] Corporation can offer their "Tec Crete II" system in lieu of "Tec Crete I" and ship by mid to late October 2000. This is the last available slot for this product until January/ February 2001. If this offer is accepted, we strongly suggest we place the order for this material immediately. Attached is a technical sheet which shows an increase in strength of the Tec Crete II system due to the use of the galvanized steel top sheet. Please call us for convenience if you have any questions regarding this.

Provide the Tec Crete II panel system in lieu of Tec Crete I.

Original Bldg 3 Bid Offering:	\$352,539.00
Add for Tec Crete II:	\$27,400.00
Total Revised Price:	\$379,939.00

**Cost increase
\$27,400 (8%)**

Why do such things happen?

- Problem awareness too late
 - A problem should be detected before it becomes a *problem*
 - Information must be delivered simultaneously to supply chain members
- It is difficult to coordinate all the supply chain participants in an efficient way
 - Numerous trades are involved in a single project
 - Each of parties involved has conflicting goals and objectives
 - Key information is not shared
 - Communication lead time

What is Peer-to-Peer (P2P)?



- Communicate exclusively with each other and do not connect to servers or central database.
- By the year 2003, 30 percent of corporations will have experimented with P2P applications

(source: Gartner)

Server/Client vs. Peer-to-Peer

	Server/Client	Peer-to-Peer Computing
Plus	<ul style="list-style-type: none">- Security- Scalability- High speed- Centralized data backup	<ul style="list-style-type: none">- Simple- Low investments- Low maintenance- Reliability (No single point failure)
Delta	<ul style="list-style-type: none">- Expensive- Dependency on central controller (a few servers)	<ul style="list-style-type: none">- Security- Scalability

P2P in supply chain management

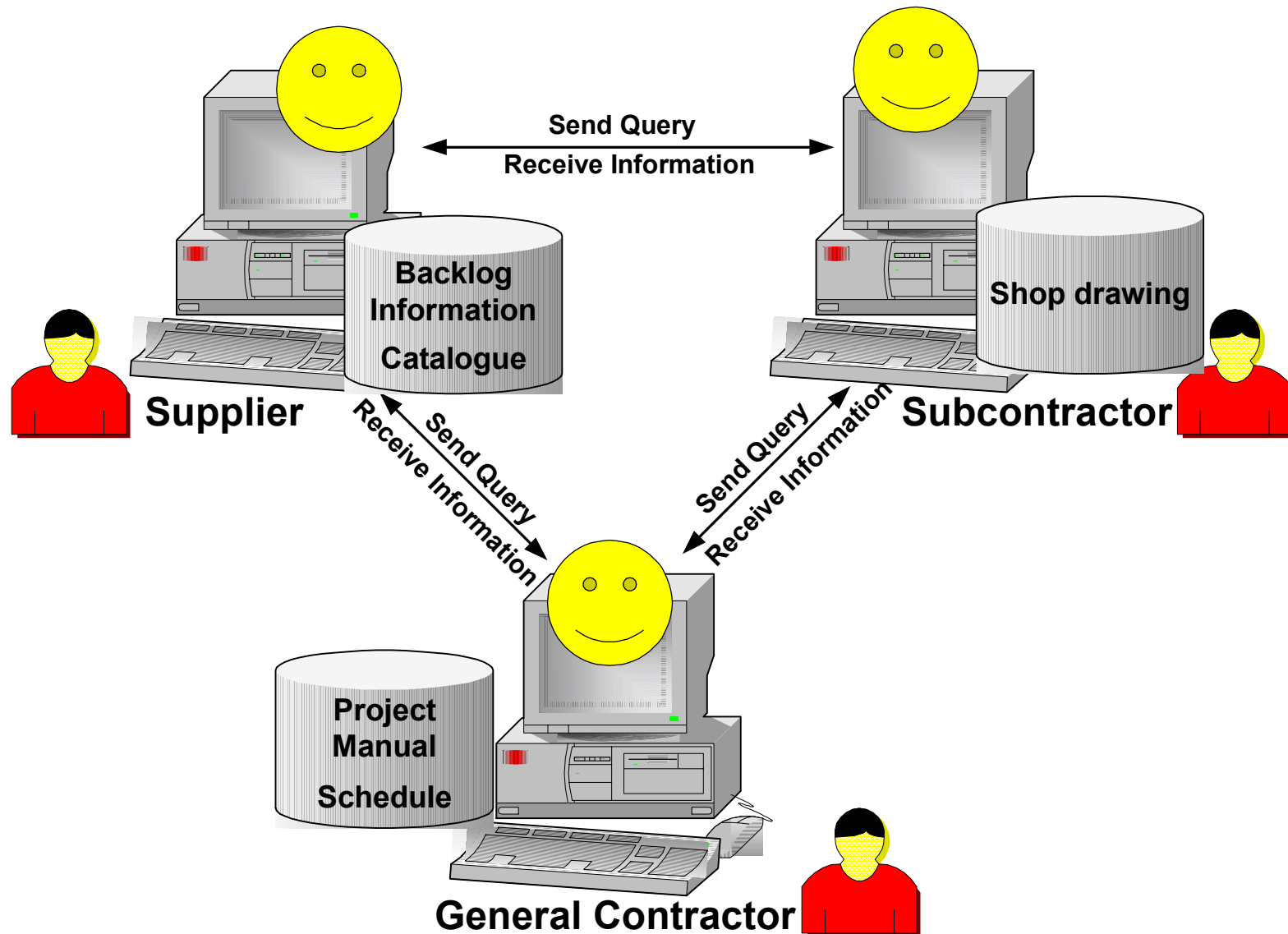
Company	Application
Sourceree Groove.net	Information sharing tool in global supply chains.
Biz2Peer Technologies	P2P marketplace platform conducting supply chain management
Consilient	Allows businesses to create agents that carry out business processes like procurement

Research Question

How can P2P and agent technology support more efficient supply chain processes in the construction industry?

- What information must be shared to improve decision-making collaboration?
- Can it reduce problem resolution latency?
- To what extent should we allow routine tasks to be automated?

Proposed Framework



Research Methodology

- Survey of AEC practices
- Propose a supply chain model using Peer-to-Peer computing technology
- Build prototype of P2P-based supply chain management system

Milestones and Deliverables

Tasks	Completion date
Survey of AEC practices regarding required information and corresponding types of decisions in supply chain management.	End of Autumn Quarter 2001
Identify issues in Peer-to-Peer computing technology in terms of its implication in the construction industry.	End of Winter Quarter 2002
Develop a prototype and conclusion.	End of Spring Quarter 2002

Deliverables - Technical report, Journal article, Prototype, and web documentations.