Designing New Office Workspaces for 2020

Tom Austin

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Excellent Office Redesign Results (Lilly)

Replacing generic cube farms with multiple, specialized spaces	Before	After
Square footage (470,000) per employee (3,300)	212	156
Furniture cost per employee	$9,100	$4,900
Capital cost per employee	$34,000	$18,000
Annual hours lost per employee to noise	32	22.8
Annual hours lost per employee to drop-by visitors	34.8	22.8
Annual hours lost per employee waiting for feedback or approval from managers	29.6	13.6
Report: Workspace – an attractive aspect of the job	21%	58%
Report: Workspace created a stimulating atmosphere	18%	45%
Report: Satisfied overall with workspace	34%	64%
Email volume		Down 50%
Time lost looking for meeting rooms, waiting		Down

Key Issues

What is IT's role in workspace design?

How can workspace design impact organizational performance?

What trends will have the biggest impact on workspace design?

How will changes in the nature and culture of work influence workspace design?

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Outline

1. Role of IT

2. Mobility, Globalization and Proximity

3. Space cases and guidelines

4. Hoteling and reservation systems

5. Smart, capable, secure and efficient buildings

6. Environmental and privacy concerns

7. Devices

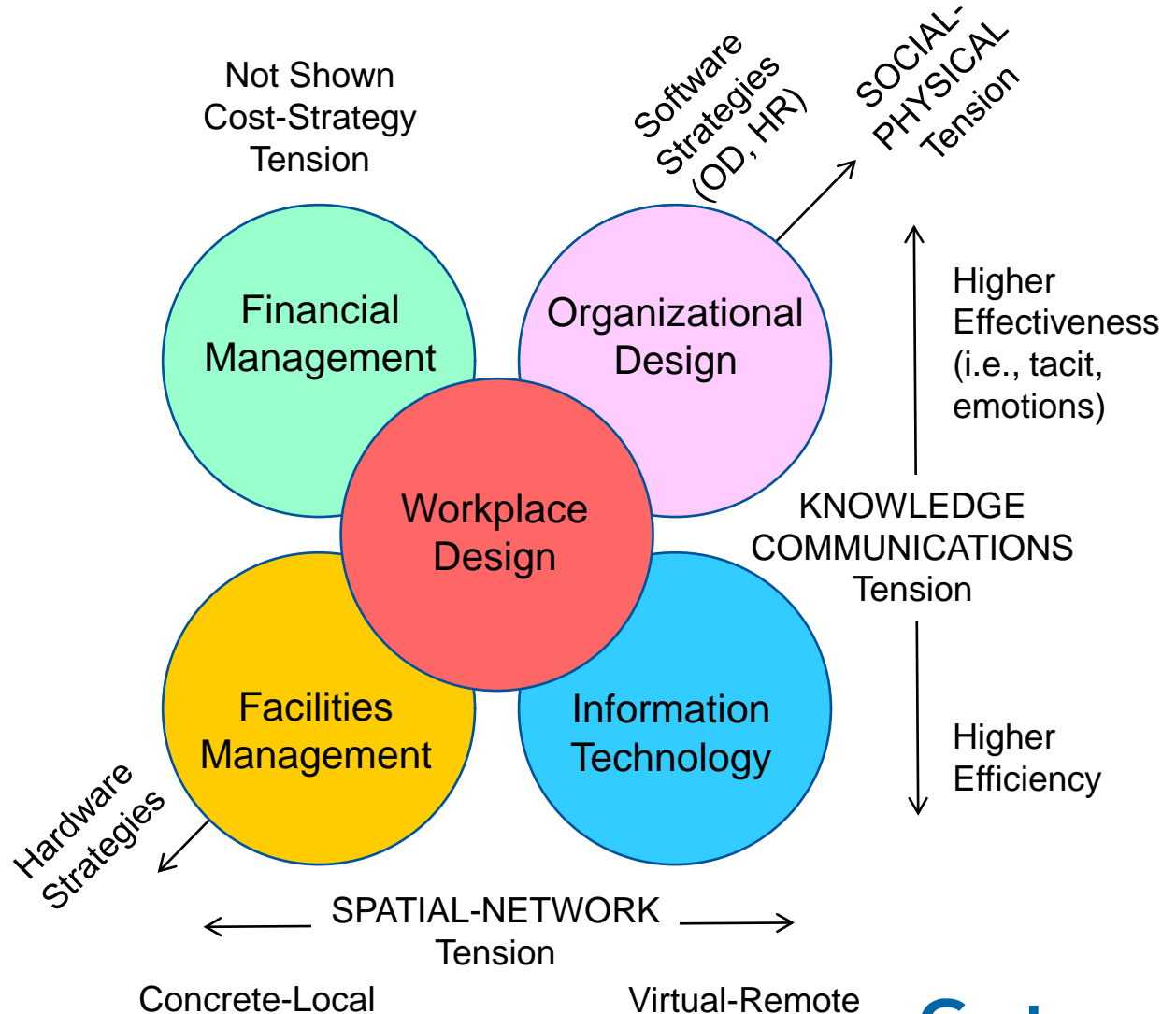8. Nature and culture of work

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Workplace Design: A New Managerial Imperative (Chan, Beckman and Lawrence's Model)

Manage the tensions across all the different axes in this figure (including the tension between cost control and all the other nodes)

Not Shown
Cost-Strategy
Tension

Software Strategies (OD, HR)

SOCIAL-PHYSICAL Tension

Financial Management

Organizational Design

Workplace Design

Higher Effectiveness (i.e., tacit, emotions)

KNOWLEDGE COMMUNICATIONS Tension

Facilities Management

Information Technology

Higher Efficiency

Hardware Strategies

SPATIAL-NETWORK Tension

Concrete-Local

Virtual-Remote

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Proximity Rules:
Keep people close where you can

- Allen Curves (late 1970s)

  - Frequency of interpersonal communications

    - Frequency drops exponentially as distance increases

    - Strong negative correlation for *all* communications media

  - Fifty meter critical distance for weekly technical communication
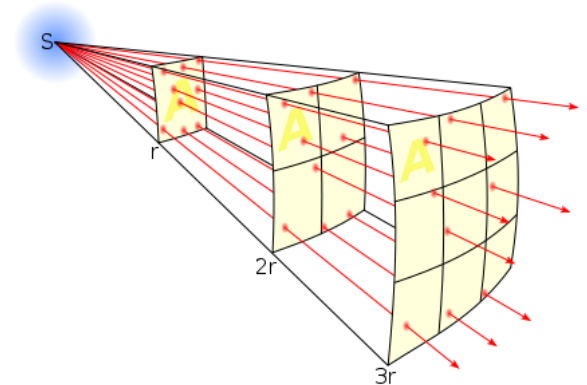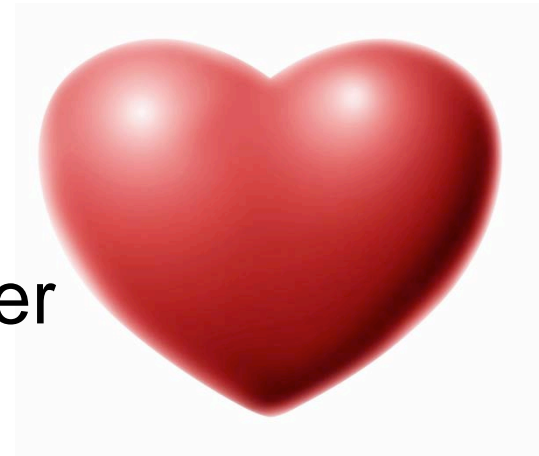
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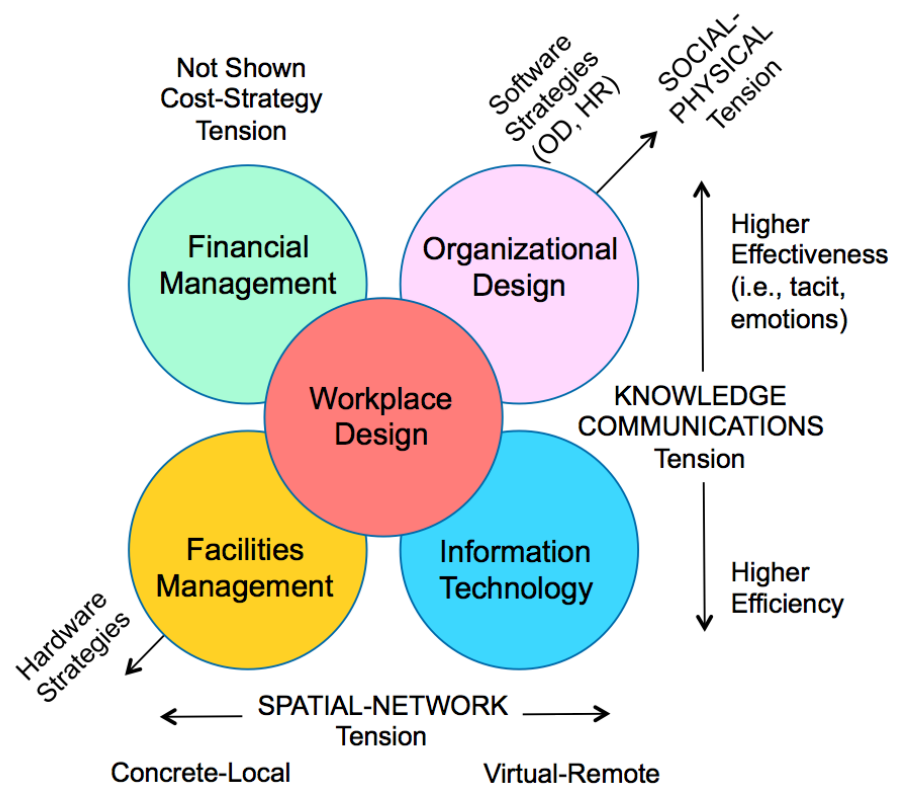http://en.wikipedia.org/wiki/File:Inverse_squar
e_law.svg

- Proximity makes the heart grow fonder

- <u>Co-location is best</u> … but typically unachievable

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The mobility and globalization revolution: Working together apart

- "The World Is Flat" – Thomas Friedman

- "Mobility changes everything"

- Balance the tensions – it's not just about the physical space

The more people work together in a physical space, the more effective they are working apart

Chan, Beckman and Lawrence Model

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Design Spaces – Citrix Example

Framework Goals

- Design thinking

- Better support team innovation

- More, earlier and faster collaboration

- Fewer silos

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Decisions

- Unconventional

- Large

- Open and transparent

- Imperfect

- On wheels

- No reservations

- Iterate

- Engage remotes

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A Wheeled Wonder: Physical Structure Follows Strategy and Reflects Culture

- SEI's Goal: Reflect the culture's values as encapsulated in the physical office itself

  - Egalitarianism

  - Empowerment

  - Transparency

  - Flexibility

  - Teamwork and interaction

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A Wheeled Wonder: Physical Structure Follows Strategy and Reflects Culture

- New employees push their new (wheeled) desk and chair to their assigned space

- No offices for anyone; phones are team-phones

- Employees move their desk every 6 months

- Walls lined with extensive collection of contemporary art to invite creativity and debate
  - There are no "sacred cows"

- Lessons
  - Embrace and embody the culture
  - Fiscal responsibility (artwork is off the books)
  - Build for flexibility (and disposability)

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Who Moved My Cube?

- ## SAS results

  - Case study: 9% of employees interacted in streets and café

- ## Affordances of effective spaces

  - **Proximity**
    - Bring people together and remove barriers
  - **Privacy**
    - Fear of being overheard or interrupted
  - **Permission**
    - To convene and speak freely

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Designing Open Work Spaces to Stimulate Fruitful Interactions

- Mixed results across cases

- Data on driving face-to-face team member interactions

  - **Visibility**

    - People in high visibility locations had 60% more interactions

  - **Density**

    - With 16 people within a 25 foot radius, 84% more interaction than when only 4 people

  - **Oases**

    - With more informal meeting places (22 within 75 feet), 102% more interactions than when there were only 4 meeting places

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From "Who Moved My Cube?"

Privacy

Proximity

Permission

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Selected Space-related Guidelines

- Design for activities, not roles.

- Assume people move several times a day.

- Establish social conventions.

    - OK to ask someone working alone in a meeting room to move for a meeting.

    - Put cards on tables to remind people of what's expected. If you work in a lunch area, people wanting to eat might ask you to move. Remove the cards when no longer needed.

- Measure results via observation

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More Selected Space-related Guidelines

- Furniture should echo the space's purpose.

  - Benches cue collaborating.

  - Chairs opposed to each other for meetings, side-by-side for co-working.

  - Cube zones. Low (or no) walls for interaction; High for solitude; Soundproof (or quiet zone) cockpits for privacy or concentration.

- Thick carpeting for quiet work areas, thin for high traffic.

- Corners and cubbies in the open work areas for phone calls.

- Natural light, free flowing air and real "green" rooms (living plants)

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Hoteling and Reservation Systems

- Randomized spaces not ideal

  - *"How many friends have you made in hotels? When the person next door is different every day, informal social relationships don't develop easily."* (*Davenport, HBR,* "Why Office Design Matters")

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Hoteling and Reservation Systems

- Randomized spaces not ideal

    - *"How many friends have you made in hotels? When the person next door is different every day, informal social relationships don't develop easily." (Davenport, HBR, "Why Office Design Matters")*

- Randomize in neighborhoods

- Lockers in high traffic areas

- Keep some space outside the reservation system

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Variety: Libraries, trading floors, control centers, huddle rooms, cubes and more

Photo by **DAVID ILIFF. License: CC-BY-SA 3.0** en.wikipedia.org/wiki/File:NYC_Public_Library_Research_Room_Jan_2006.jpg

Image source: http://en.wikipedia.org/wiki/File:Mission_control_center.jpg

Image source: http://en.wikipedia.org/wiki/File:NYSE-floor.jpg

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Smart, Capable, Secure and Efficient Buildings

- Beyond HVAC and power

- It knows you and what you're doing

  - Location tracking technologies (including Foursquare-like check-ins)

  - Biometric authentication (goodbye to "swipe" cards)

  - Maverick* Research: The Death of Authentication

- Physical security, behavior patterns and normal activities

- Crime prevention via environmental design

- Intelligent energy usage

Image source: http://en.wikipedia.org/wiki/File:Taipei101.portrait.altonthompson.jpg

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Environmental and Privacy Concerns

- The walls will have eyes and ears

- Everything may be recorded – and autoclassified

Gordon Bell, Microsoft Research, MyLifeBits at the U.S. Library of Congress http://www.youtube.com/watch?v=Dq8hhPqgWcs

Environmental and Privacy Concerns

- The system knows your patterns and tries to incorporate your needs – e.g., automatically scheduling travel time based on empirical observation

- Social sharing (as in Google Events)

- Privacy concerns can have a chilling effect on collaboration

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Devices

- "The New PC Era: The Personal Cloud"

  - 4 to 6 devices per person – do not assume a single standardized device per category

  - Apps everywhere (and not IT controlled)

- Smart mobile devices becoming pervasive

  - Will replace most wired and soft phones

  - Watch for internal 4G base stations, and, for call centers, WiFi based devices

- Wireless everything except power

  - 802.11n

  - Swipe your content to the wall with Wireless Display (WiDi)

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Local Work Environments

- Real time co-editing (one display or many)

- Most surfaces touch-interactive

  - Multiple displays per person – from color e-paper to billboards

  - Multiple wireless displays almost everywhere

  - Active displays and monitored passive projection surfaces

  - 3D gestures and voice controls (various space-types)

- Video as meeting adjunct

  - Holodecks (always on, inter-facility visual portals with virtual doorways)

  - Multi-point, commodity video (as in Hangouts) for team meetings

  - Continuous hangouts for distributed virtual teams (low end video as improved Red-Green-Yellow presence indicator)

  - Affective computing telltales regarding level of attention, involvement, engagement and support

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Workspace Best Practices

- Adjustable dimensions for varied devices

  - Typing height for keyboarding (nominal 28 inches)

  - Display heights, horizontal distance, tilt, swivel and swipe to wall

- Power at work-surface top, not floor

- Controlled lighting to minimize glare (e.g., assume any arbitrary tablet configuration)

- Provide for ergonomic, adjustable chairs

- Minimize noise propagation (e.g., baffles above standing line of sight)

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Self navigating robotic aides

Robonaut 2
(On the International Space Station)

Source: robonaut.jsc.nasa.gov/default.asp

MIT's Simultaneous Localization and Mapping (SLAM) Robot

Source: Hordur Johannsson/MIT

- Autonomous, mobile assistants with contextual awareness and able to adapt to environmental change and recognize individuals

- Self-navigating robotic aides in the office

- Self-driving automobiles (and trucks)

- Lower example uses Kinect

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Shared Multifunction Products

- Paper consumption per capita peaked in 2002

  - Not just a tablet revolution

- Set declining paper "records management" cost targets

- Ban personal printers, scanners and fax

  - Power and noise benefits

  - Save space and supply costs

- Help create oasis for informal interaction, collaboration

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Changing nature and culture of work:
The mobility and globalization revolution

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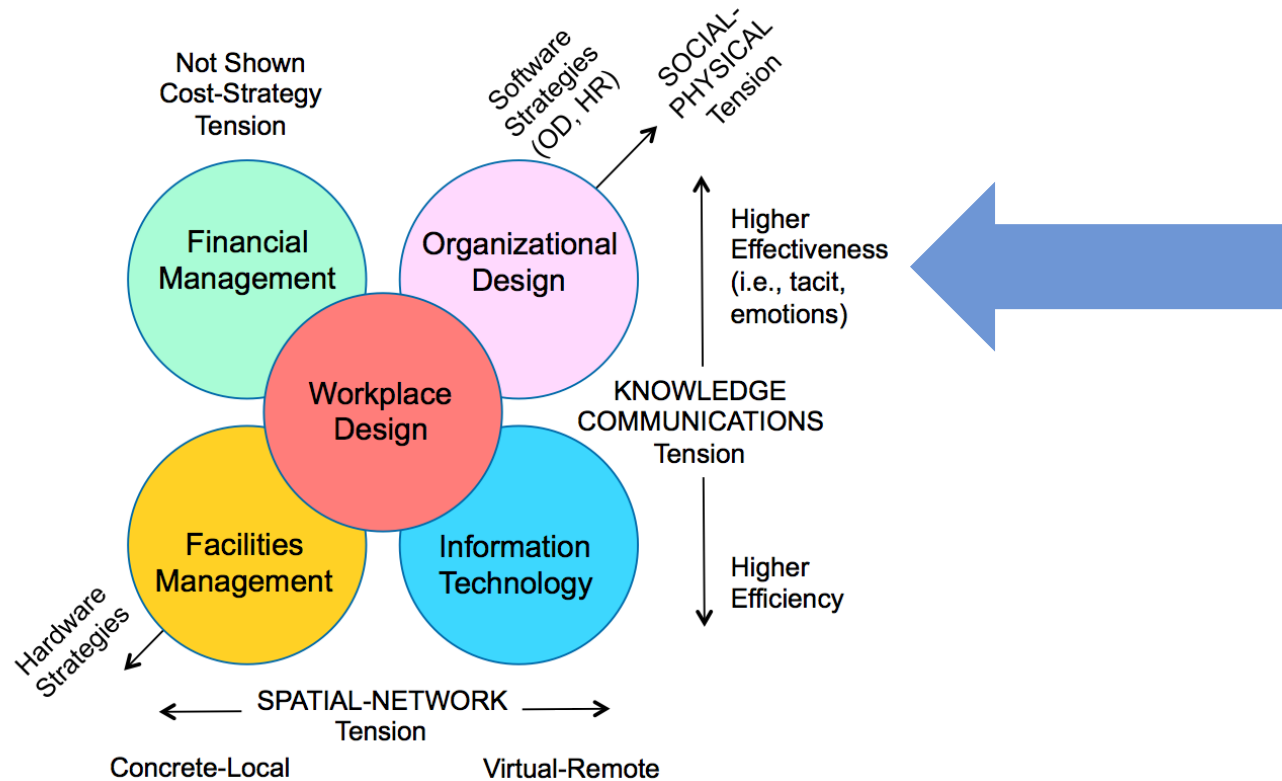
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Changing Nature and Culture of Work

- Recursive interactions across technology, business, work and society

- Growth in

  - Cognitive or interactive nonroutine work, collaboration and networking essential

  - Swarming behavior – "TeamWork on the Fly" (HBR, April 2012)

  - Reliance on weak network links, hyper connectedness

  - Involvement of "the collective" in the fabric

- Greater need for every employee to have a personal space (whether physical or virtual) – maybe not yours

- Growing demand for fewer, more capable people

- Changing workforce dynamics

  - Different assumptions about careers, job longevity and social contracts between generations

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Collaboration and Social Focus

Chan, Beckman and Lawrence Model

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Collaboration augmentation

Critical Factors

- Behaviors

- Metrics

- Culture

- Bricks

- Simple Bits

Failure Diagnosis
(80% likely)

- Where's the autopsy? (deep observational research, custom tuned solutions)

- What were the goals and metrics?

- Were there cultural impediments?

- How engaged, enthusiastic and involved were the executive?

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Social?

Other Species …

Chimpanzee — Thomas Lersch, http://en.wikipedia.org/wiki/File:Schimpanse_zoo-leipig.jpg

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… Are Social

- Self-aware

- Bonding

- Herding

- Hierarchy

- Mimicry

- Fairness

- Altruism, Self-sacrifice

- Trust and reputation

Western Lowland Gorilla (Cincinnati Zoo) Kabir Bakie
http://en.wikipedia.org/wiki/File:Gorillas_2609.jpg

Social behavior is governed by the social behavior of others.

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So Are We!

- Self-aware

- Bonding

- Herding

- Hierarchy

- Mimicry

- Fairness

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Photo credit: ©2011 tom.austin@gmail.com All Rights Reserved

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By 2017, All New User-facing Applications Will Exhibit Social-Mobile Fusion

Key Social Dimensions:

- Reputation

- Relationships

- Recommendations

- Trust

Social Features for Your Applications:

- Rewards via gamification (badges, awards)

- Ratings (raise, lower priority, and visibility)

- Transparency (views)

- Value up and down the hierarchy

- Caution

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0. Lilly Case

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Key Issues

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How can workspace design impact organizational performance? (0, 3, 4)
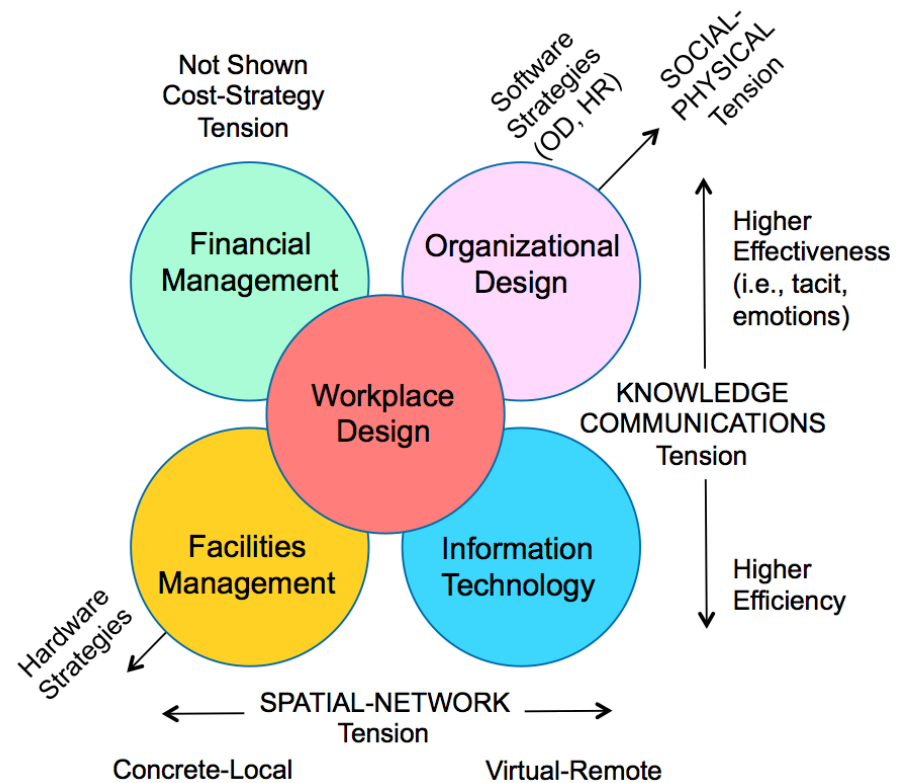
What trends will have the biggest impact on workspace design? (5, 6, 7)

How will changes in the nature and culture of work influence workspace design? (2, 8)

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Recommendations and Conclusions

- Explore
  - Culture, Social relationships, Behavioral Objectives and Business Goals

- Balance
  - The tensions in the Chan, Beckman and Lawrence Model

- Plan for the future
  - 2020 will be here very soon

Chan, Beckman and Lawrence Model

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Recommended Reading

- Designing New Office Workspaces for the Year 2020

- Watchlist: Continuing Changes in the Nature of Work, 2010-2020

- Maverick* Research: The Death of Authentication

- Magic Quadrant for Integrated Workplace Management Systems

- Transform the Workplace With Focus on Bricks, Behaviors and Bits, Mann, June 2012

- Cited Harvard Business Review articles

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