The Digital Organization Chart:

Taking Large-scale Collaboration to the Next Level

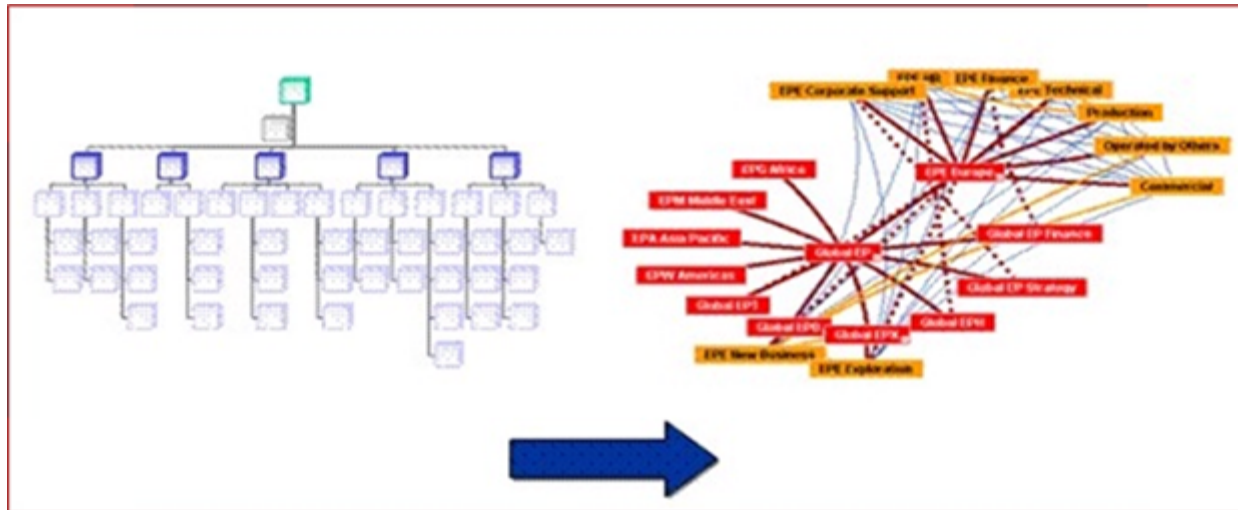Jessica Lipnack
NetAge, Inc.
www.netage.com

Our Organizational Predicament

"We can't solve 21st-century problems
with 19th-century organizations"

A Nobel Laureate's View of Organization Charts

Anyone who has worked in a large organization — or, for that matter, reads the comic strip "Dilbert" — is familiar with the "org chart" strategy. To hide their lack of any actual ideas about what to do, managers sometimes make a big show of rearranging the boxes and lines that say who reports to whom.

—"The Dilbert Strategy" by Paul Krugman, March 31, 2008, The New York Times

But are we
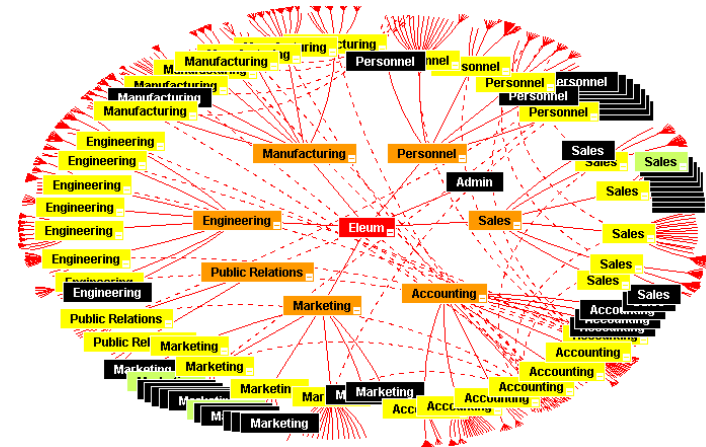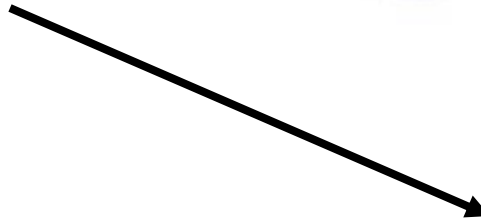## "throwing the baby out with the bathwater?"

Which Resembles Your Organization?
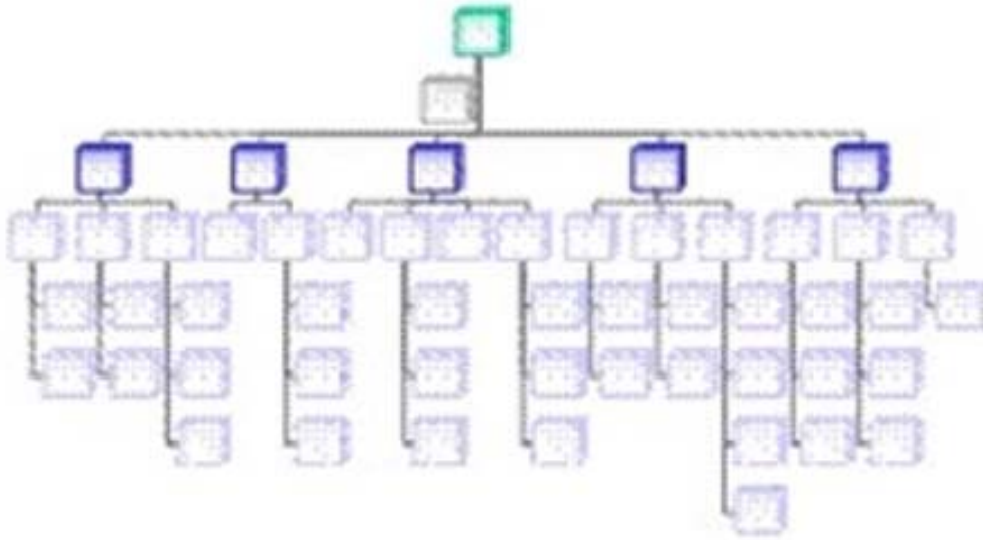
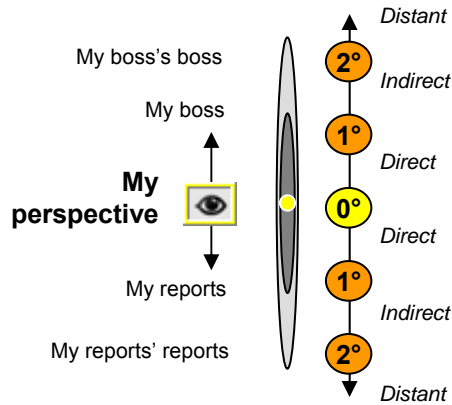**How many boxes
can you see at once?**
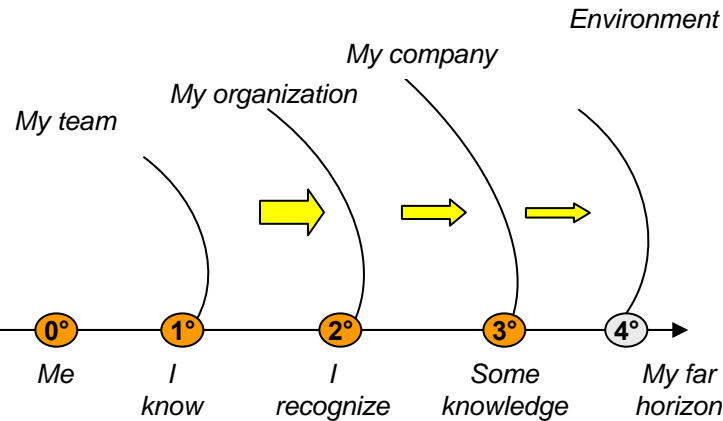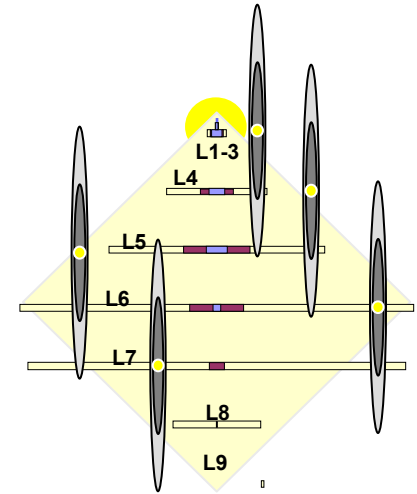
**"It's like seeing
the organization through a pin hole"**

How Far Can We Really See?

People see about two levels up and down

My boss's boss

My boss

My perspective

My reports

My reports' reports

2°	*Distant*
	Indirect
1°	*Direct*
0°	
	Direct
1°	*Indirect*
2°	*Distant*

Zones of visibility across organization

L1-3
L4
L5
L6
L7
L8
L9

Environment

My company

My organization

My team

0°	1°	2°	3°	4°
Me	*I know*	*I recognize*	*Some knowledge*	*My far horizon*

And people can see about two levels "out"

More to the Org Chart Than We Think?
Consider "The New Science of Networks"

Random

Bell-curve Distribution

Scale-Free

Power-law Distribution
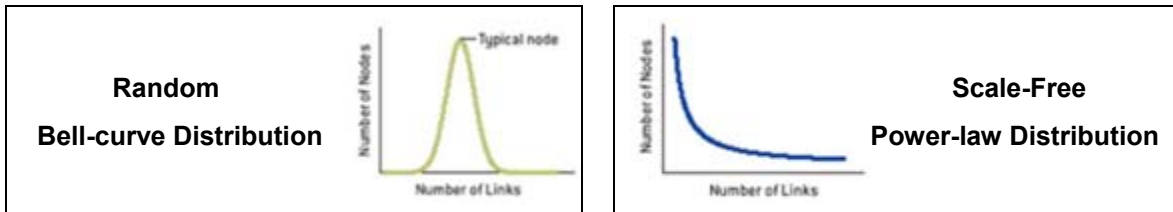
From "**Scale-Free Networks**" by Albert-László Barabási and Eric Bonabeau, Scientific American, May, 2003

Network	Type	Nodes	Links
Cellular metabolism	Biology	Molecules involved in burning food for energy	Participation in same biochemical reaction
Protein regulatory network	Biology	Proteins that help to regulate a cell's activities	Interactions among proteins
Sexual relationships	People	People	Sexual contract
Hollywood	People	Actors	Appearance in same movie
Research collaborations	People	Scientists	Co-authorship of papers
Internet infrastructure	Technology	Routers	Optical and other physical connections
World Wide Web	Knowledge	Web pages	URLs

Might same principles apply to organizations?

Hierarchy (org chart)	Organization	Positions	Reporting relationships

"Eleum's" Problem

- New multi-billion-dollar 5000-position, 8-country regional unit in 100,000-position global company

    - *Managers and staff no longer in same place for many functions*

- Complex organization in complex, dangerous industry

    - *Thought they'd solved "visibility" problem through "flat organization"*

- Highly experienced and thoughtful senior executives

    - *Knew how to manage face-to-face but not virtually*

- Executives wondered if they had the organization they wanted

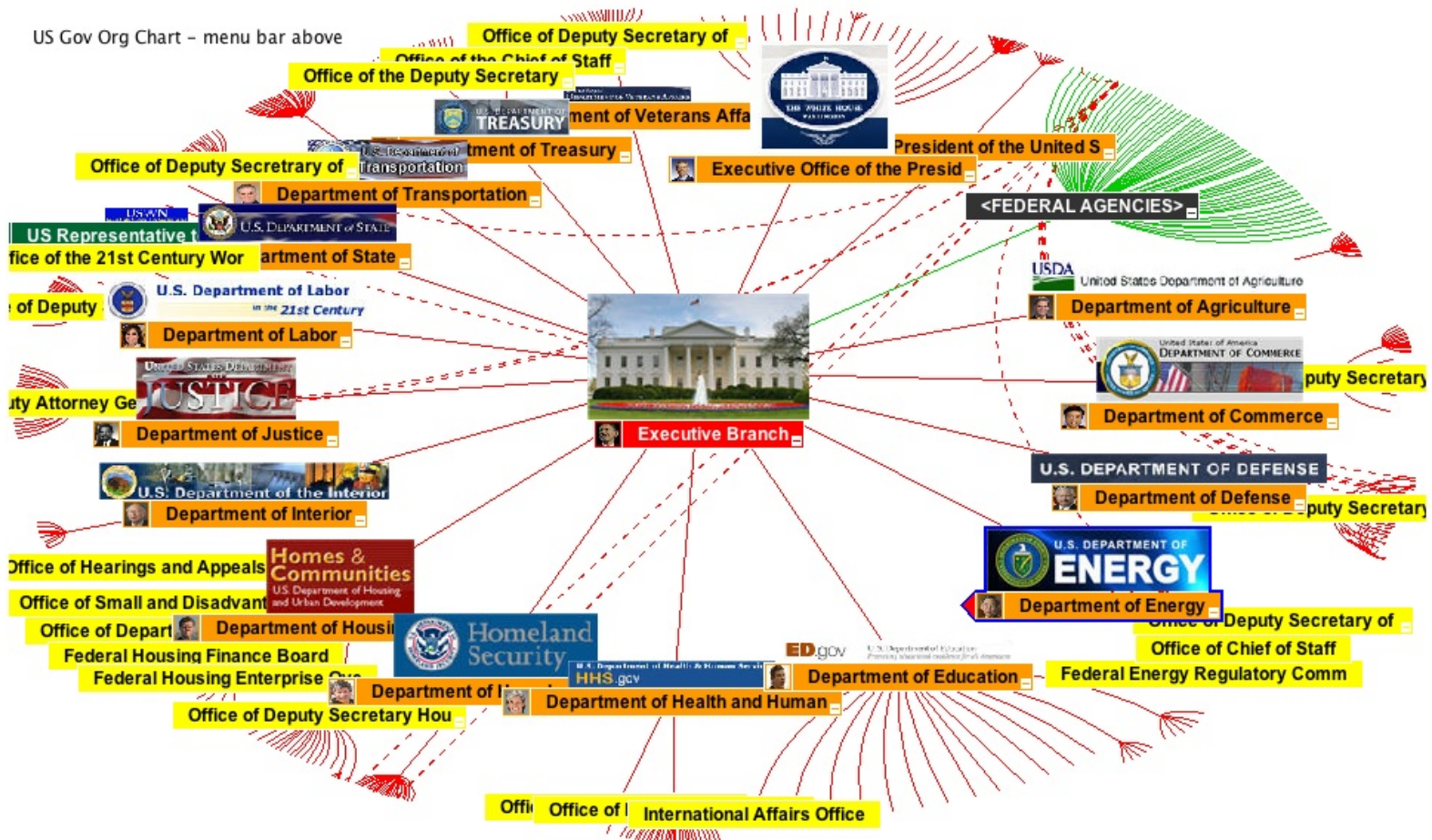# Decided to Map Eleum's Organization as a Network

- Pulled "who-reports-to-whom" data from enterprise HR system

- Each position reported to another position

- Each position held by unique person, or vacant

- Each position part of specific sub-organization

- Each position situated in specific location

A Familiar Organization in OrgScope

Recognize Anyone?

© 2009 NetAge, Inc.

Drilling Down into Treasury

US Gov Org Chart – menu bar above
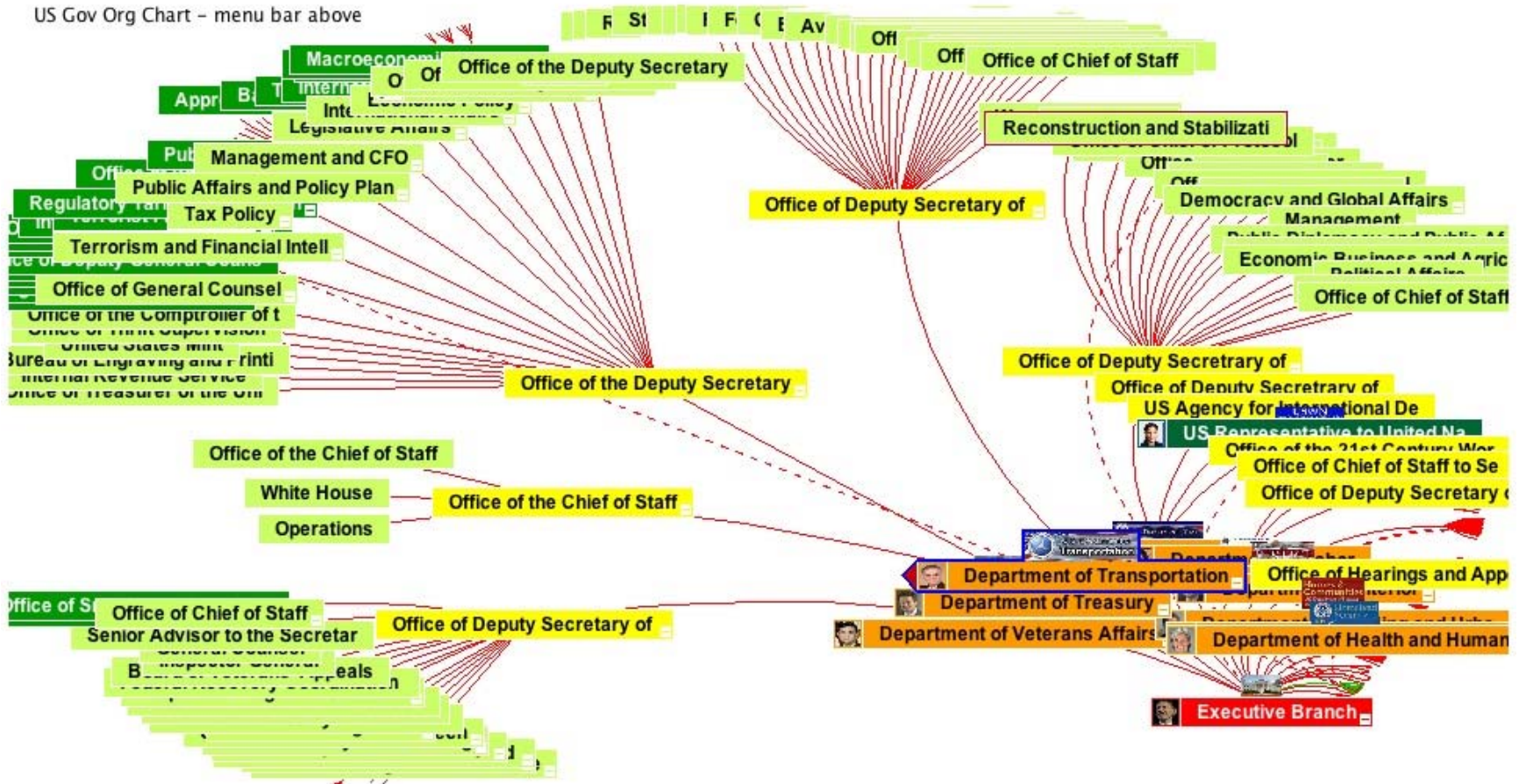
Some Metrics for the President

Surprise #1:
Organizations Are Diamonds, Not Pyramids

Distribution of Leaders by Level

Distribution of All Positions by Level
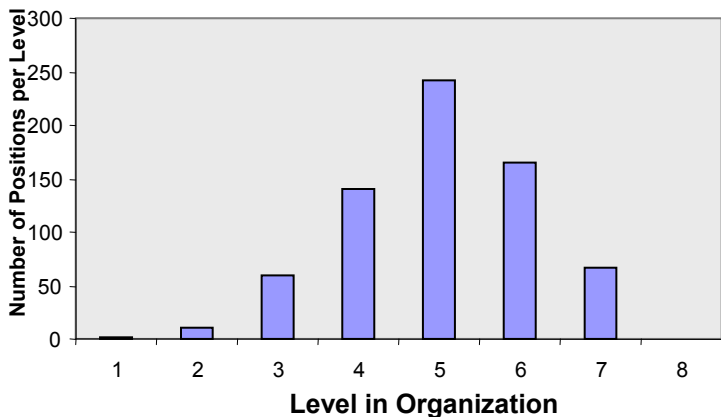
Classic shape of organization
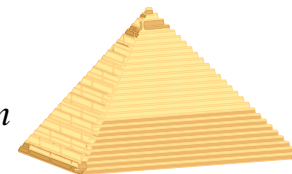
Level in Organization

Number of Positions

Legend: Leaders / All Other Positions
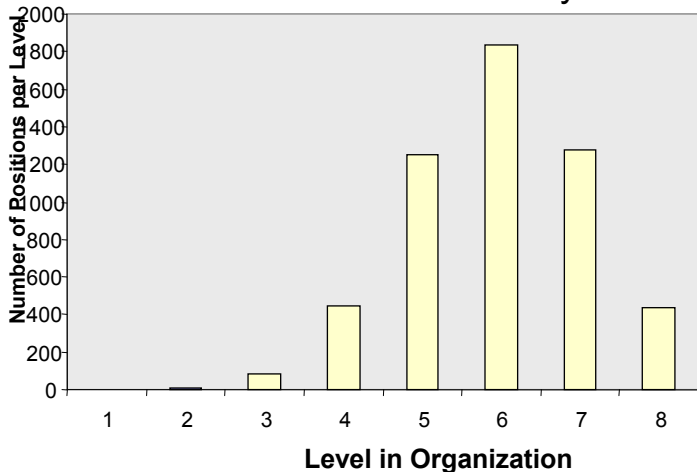
See "The Virtual, Networked Organization" book chapter

Surprise #2:
Leadership Distributed like Scale-free Network

# of Direct Reports (Leadership Span)

Myth of normal leadership span

See working paper on "Principles for Reorganization: How to Mix Levels, Span, and Size to Maximize Communication and Decision-Making"

What Else Eleum Discovered

1 — TOTAL POSITIONS

- ■ Exec Mgr 6%
- ■ Line Mgr 12%
- □ Staff 82%

Chart axis: 0, 1000, 2000, 3000, 4000

MANAGERS

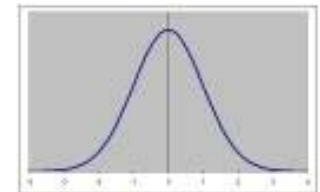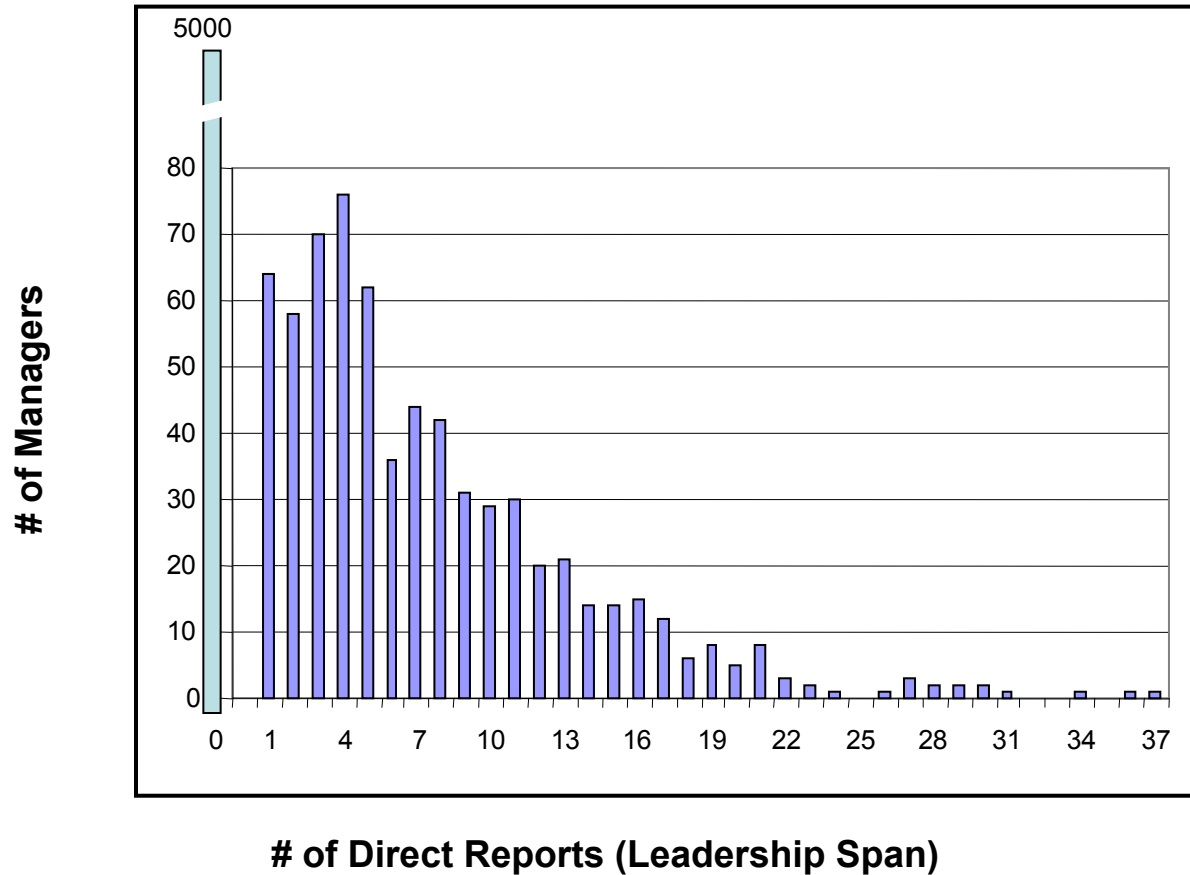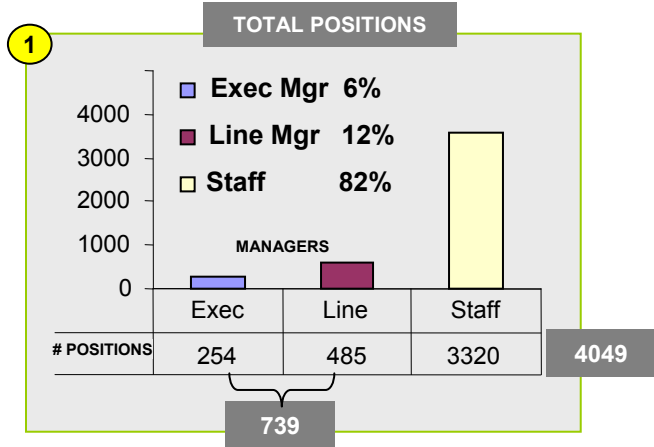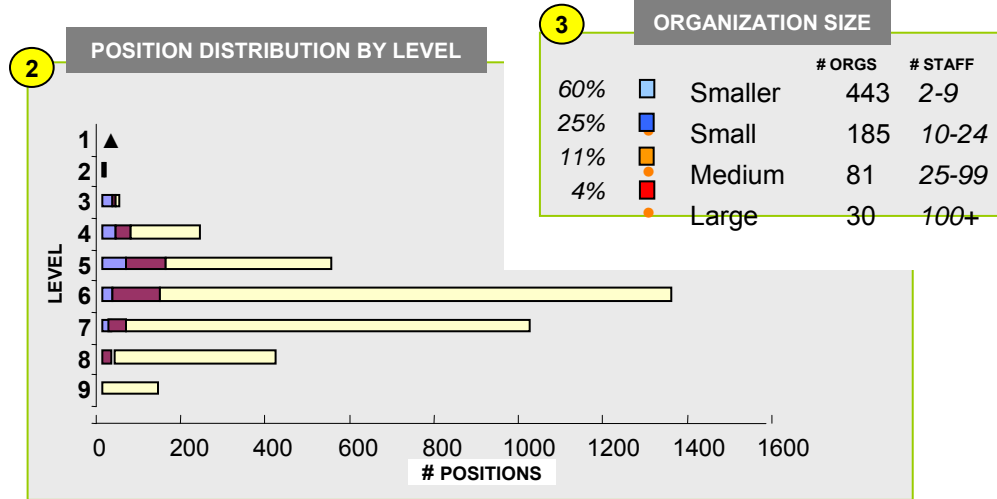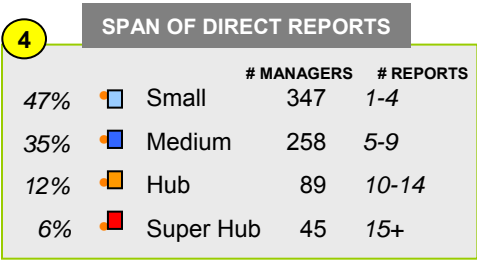|	Exec	Line	Staff	
# POSITIONS	254	485	3320	4049

739

Analysis first tags positions as staff or managers (18%). "Executive" managers lead other managers; "Line" managers direct only staff.
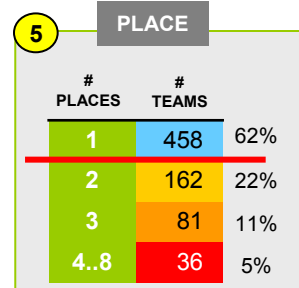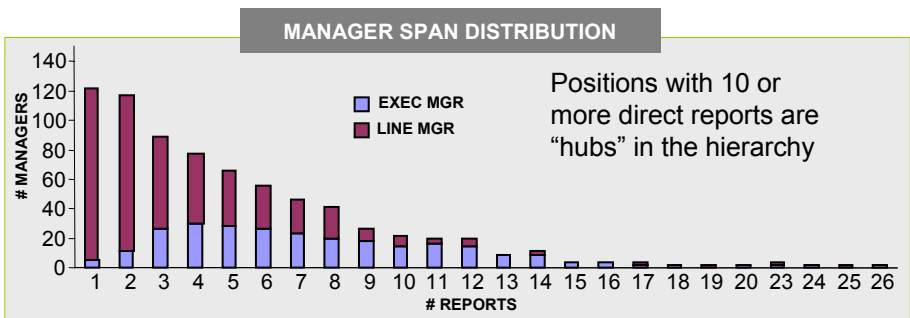
2 — POSITION DISTRIBUTION BY LEVEL

LEVEL 1–9, # POSITIONS axis: 0, 200, 400, 600, 800, 1000, 1200, 1400, 1600

Shows 9-level organization with bulk of positions in middle.

3 — ORGANIZATION SIZE

			# ORGS	# STAFF
60%	□	Smaller	443	2-9
25%	■	Small	185	10-24
11%	●	Medium	81	25-99
4%	■	Large	30	100+
	●	Large		

Most sub-organizations are small, but 15% are 25 or larger; 4% are larger than 100.

4 — SPAN OF DIRECT REPORTS

			# MANAGERS	# REPORTS
47%	□	Small	347	1-4
35%	■	Medium	258	5-9
12%	■	Hub	89	10-14
6%	■	Super Hub	45	15+

Most (82%) managers have staffs smaller than 10. Some (6%), 45 managers, have direct report teams of 15+.

MANAGER SPAN DISTRIBUTION

MANAGERS axis: 0, 20, 40, 60, 80, 100, 120, 140
REPORTS axis: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 25, 26

- ■ EXEC MGR
- ■ LINE MGR

Positions with 10 or more direct reports are "hubs" in the hierarchy

5 — PLACE

# PLACES	# TEAMS	
1	458	62%
2	162	22%
3	81	11%
4..8	36	5%

Most (62%) management teams are collocated; many (38%) are not.

6 — HOTSPOTS

HOT TEMP	TOT MGR	
2-3	309	44% Cooler
4-6	251	36% Cool
7-9	116	17% Hot
10-12	24	3% Hotter
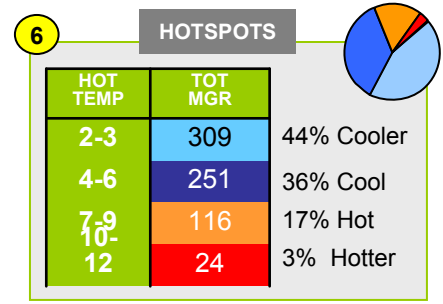
Some positions are "hotspots" -- by measures of org size, span, and place more complex than the rest

15

Eleum's Executives Then Asked New Questions

- Are right people in **leadership groups**?

- Does our **communication strategy** reach everyone?

- Who are the "**hubs**" in organization? Where are they? Are they different?

- How many people are really have **on the line**?

- What happens when we add **matrix reports**? **Contractors**? The **global organization** we're part of?

- What is the **leadership profile** at each level?

- Where is our **organizational center of gravity**?

- What importance do levels have as organizing principle?

How Eleum Made Itself More Transparent

- Through network mapping, Eleum discovered:

  - *Shorter communication paths*

  - *Highly-connected managers*

  - *Managers with largest organizations*

  - *Managers missing from leadership forums*

  - *The truly virtual teams*

 - *The people and positions at risk: "hotspots"*

Management By *Clicking* Around

- Very difficult to "manage by walking around" in virtual world
  - *Leaders cannot be everywhere*
  - *More globally distributed, less face-to-face contact*
  - *Travel an increasing hassle; sometimes banned*

- The higher your position and larger the organization, the greater the difficulty of "grasping the whole" and "keeping in touch"

- Virtual organization tools let you be in many places at once without moving—or even while moving
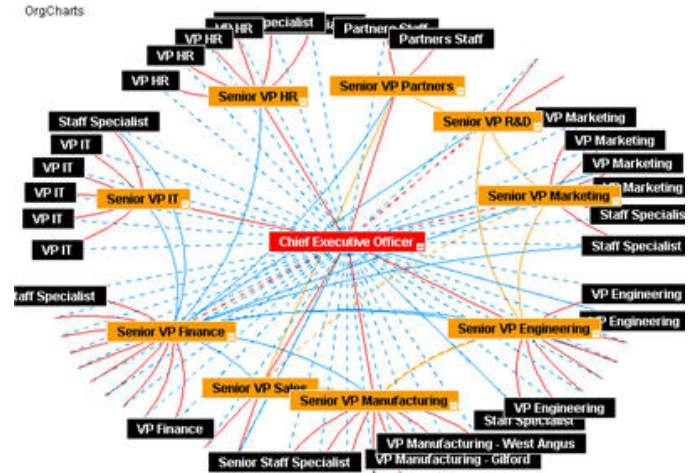
Two Key Networks: Person and Position
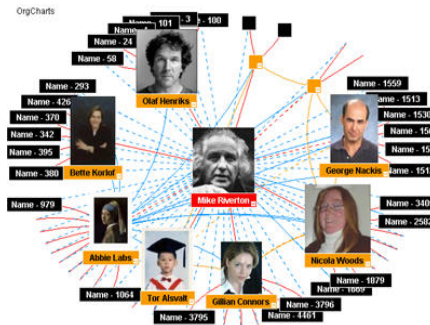
People with their social networks
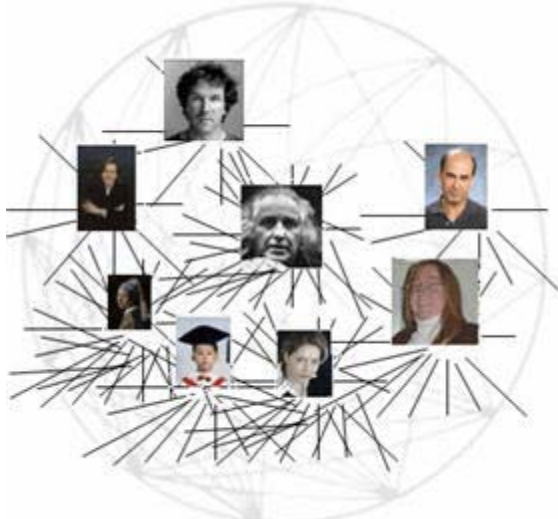
"Subjective" organization

Organizations with their position networks

"Objective" organization

Organization exists at intersection of people and positions

Four Networks Weave the Complex Organization
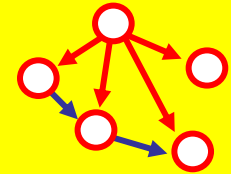
Transparent

PUBLIC

PRIVATE

Opaque

1 Organization Network

2 Working Networks

3 Knowledge Networks

4 Social Networks

My Position
Whom do I work for?

Org Chart

Functions flow as process network from suppliers to customers

My Job
Whom do I work with?

Management teams
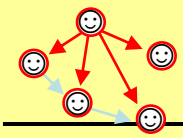
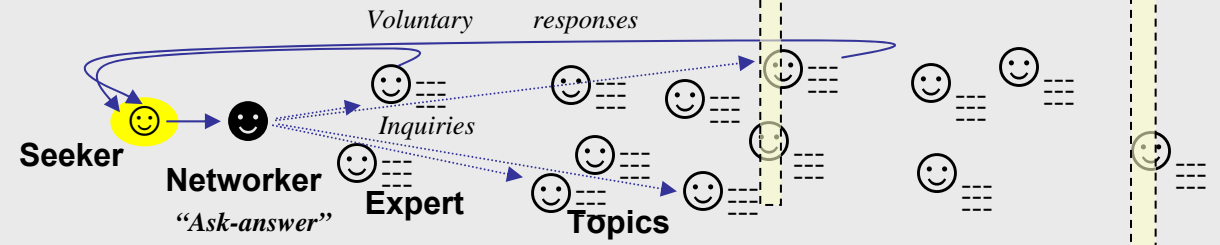*Ongoing and project teams*

Communities of practice

Special Events *"Jam"*
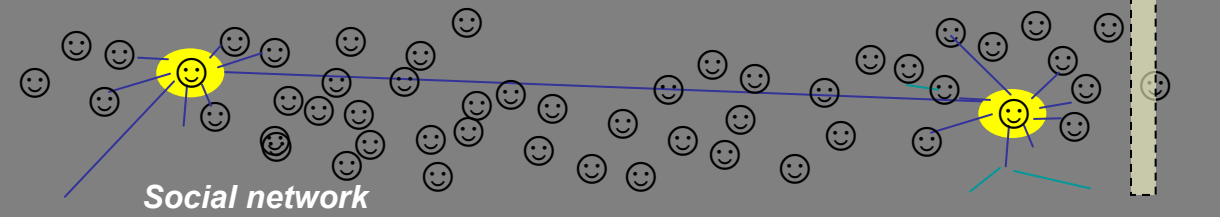
My Topics
Who knows what?

Voluntary responses

Seeker

Networker
"Ask-answer"

Inquiries

Expert

Topics

My Friends
Who knows whom?

Social network
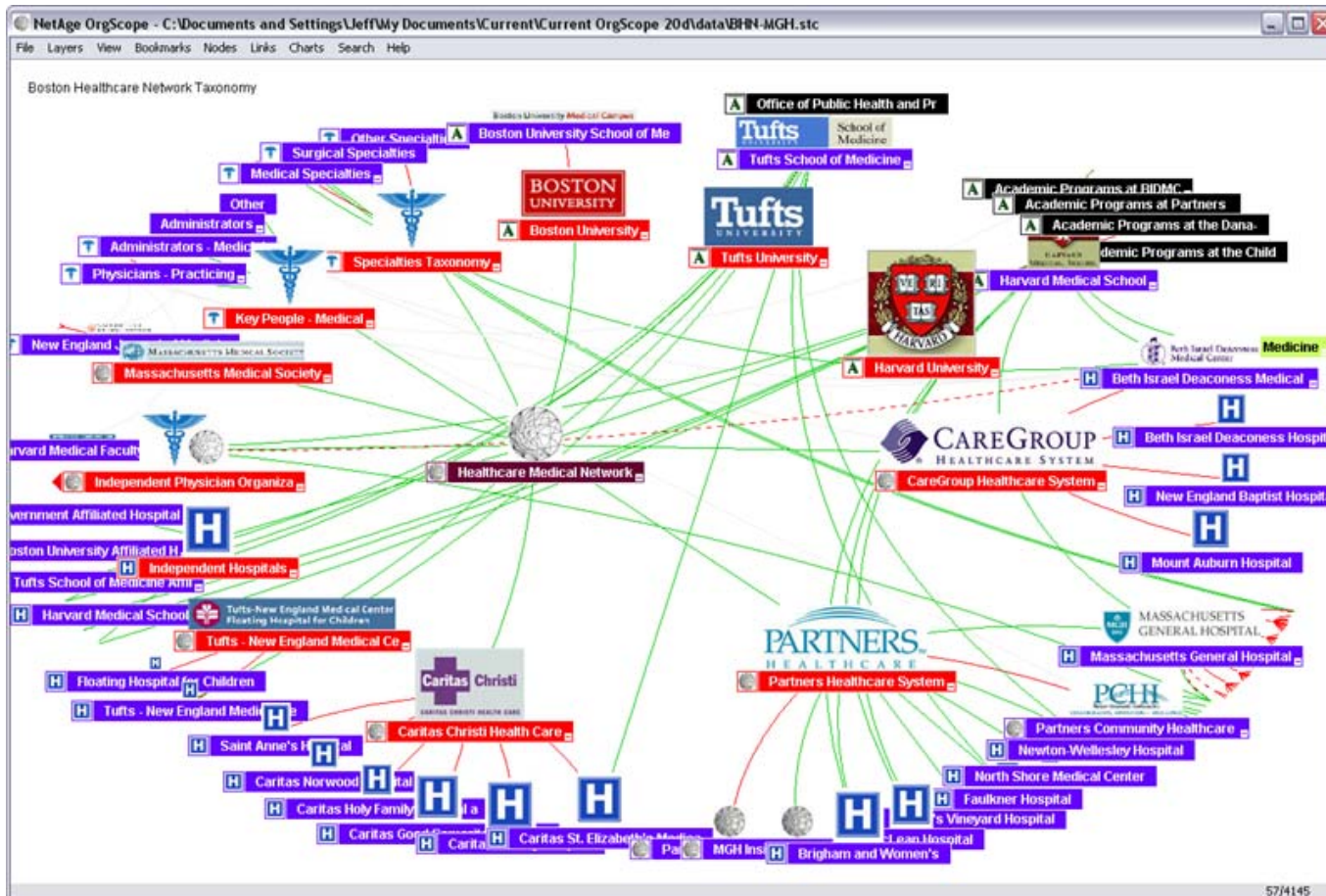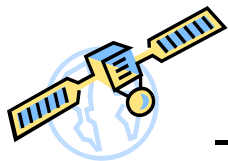
A Slice of Boston Health Care Network
Showing Some Interrelationships

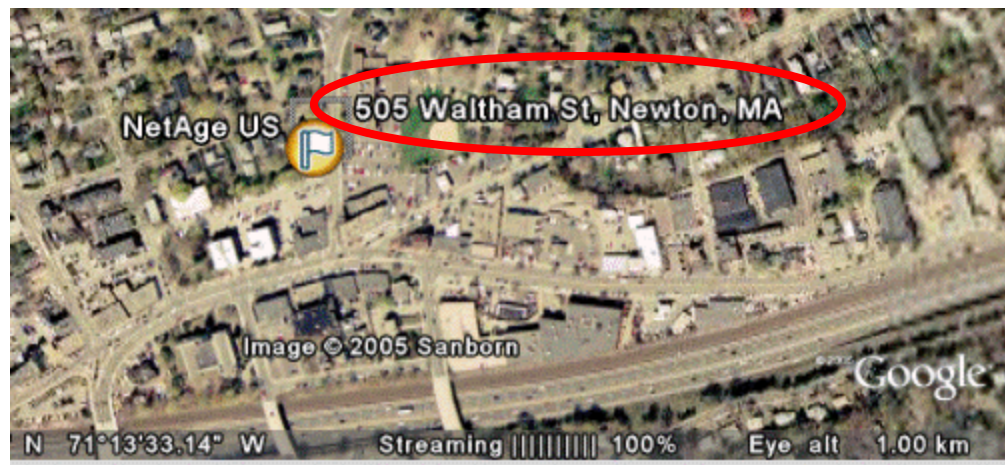# Earth-OrgScope: Whole Planet, Whole Organization

GPS coordinates

Every place has GPS address, geo-point
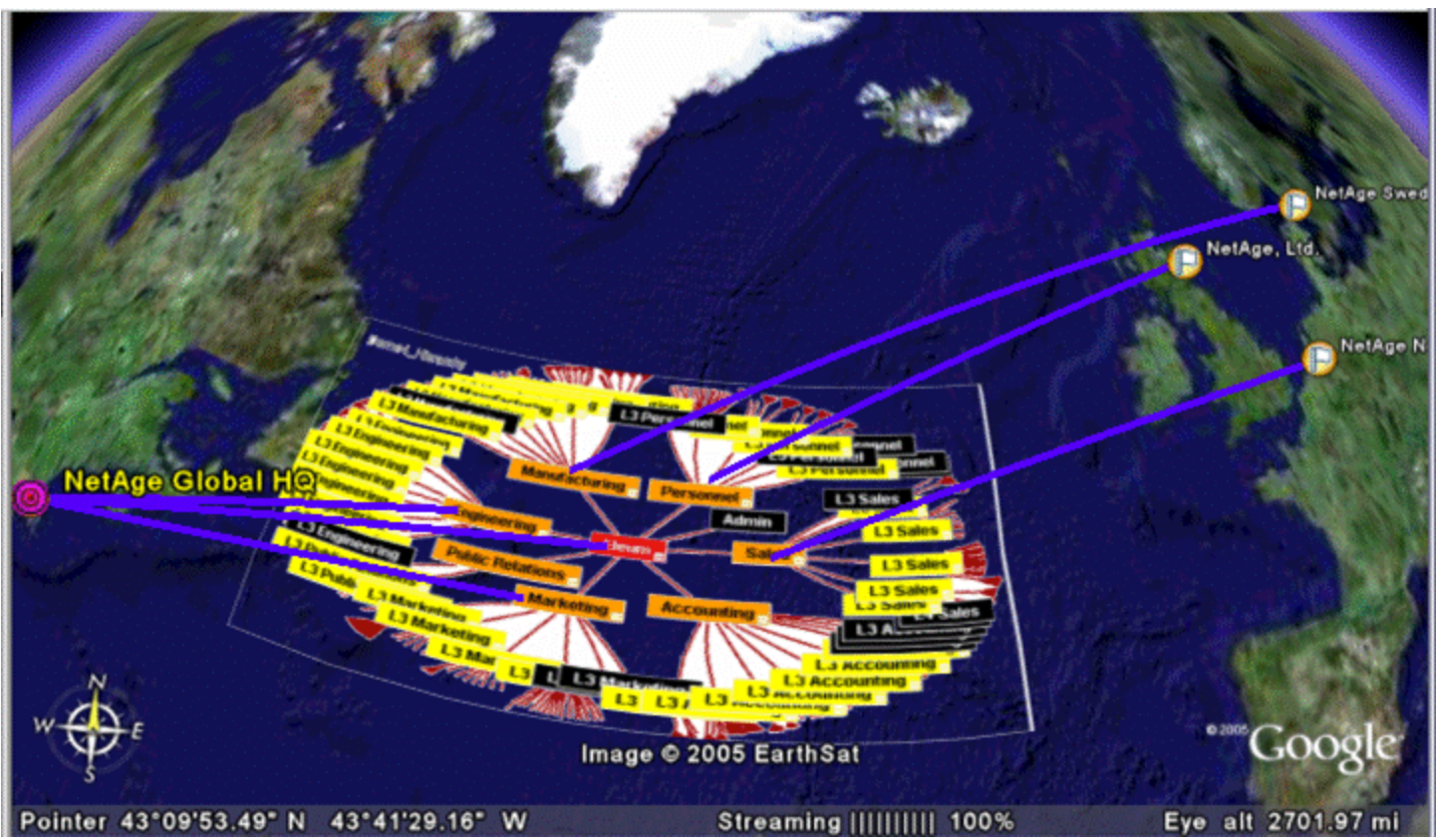

Every place has point-of-view, eye altitude

30,301 km
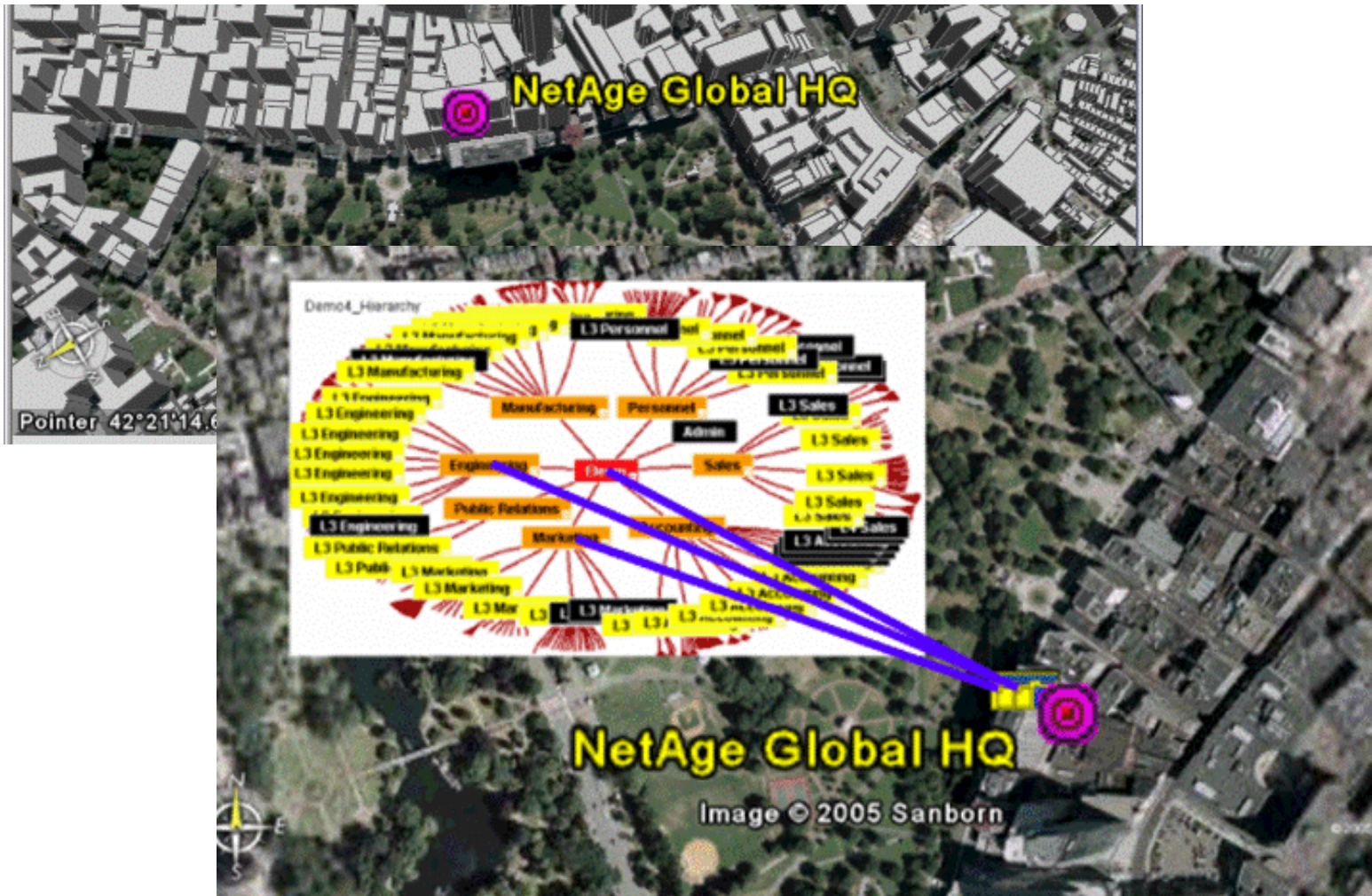
Every place has legal address
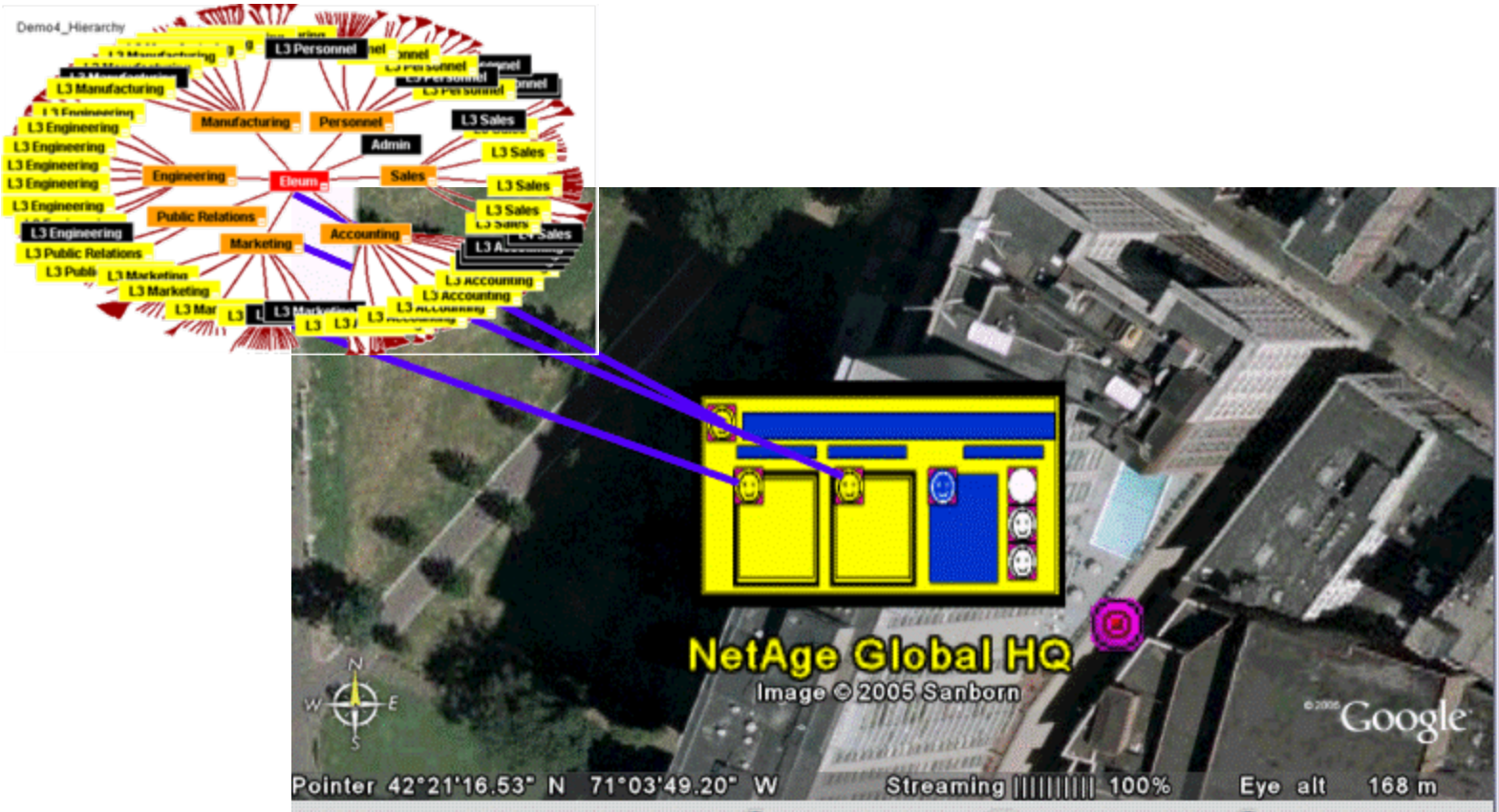
1.0 km

Organization Connects Physical Places

2701 km

Positions in Organizations
Also Can Be Physically Located and Addressed

1 km

Executive Floor Plan: Virtual and Physical

168 meters

Decide to network
Use every letter you write
Every conversation you have
Every meeting you attend
To express your fundamental beliefs and dreams
Affirm to others the vision of the world you want
Network through thought
Network through action
Network through love
Network through the spirit
You are the center of the world
You are a free, immensely powerful source
of life and goodness
Affirm it
Spread it
Radiate it
Think day and night about it
And you will see a miracle happen:
the greatness of your own life.
In a world of big powers, media, and monopolies
But of six-and-a-half billion individuals
Networking is the new freedom
the new democracy
a new form of happiness.

Decide to Network
By Robert Muller

Robert Muller is former Assistant Secretary-General of the United Nations and now Chancellor, UN University for Peace, Costa Rica. He wrote the poem for Jessica Lipnack and Jeffrey Stamps for their first book, *Networking: The First Report and Directory (1982)*

Decide to Network

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