

# BIM on Cloud

Introduction of



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Technology Development Dept.

Building Construction Management Div.

Kajima Corporation

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**KAJIMA**

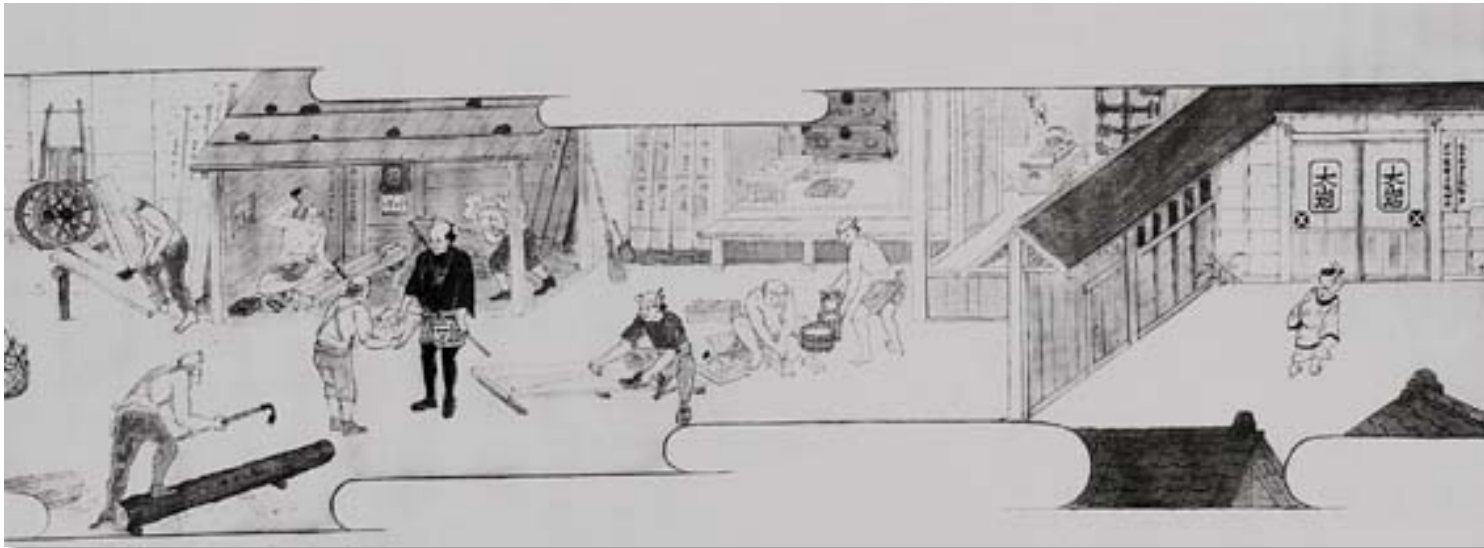
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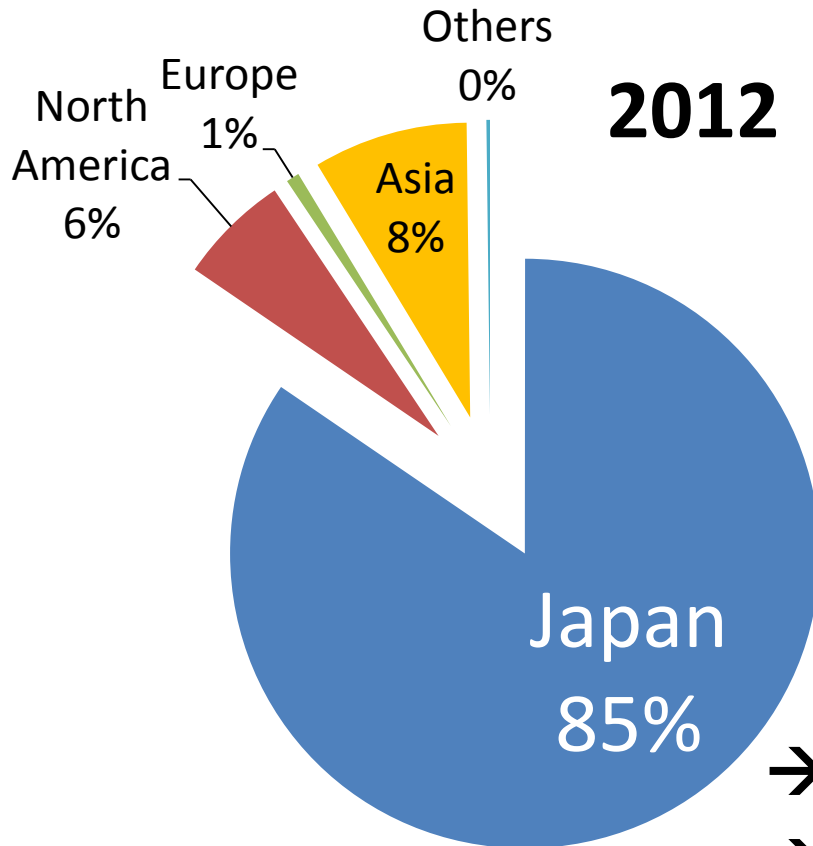
1. Company profile
2. BIM in Kajima
3. Problem
4. Global BIM (BIM on Cloud)
5. Advantages of Global BIM
6. Future work

# 1. Kajima Company Profile

Company Name	Kajima Corporation
Established	1840 (last days of Edo period)
Head Office	3-1, Motoakasaka 1-chome, Minato-ku, Tokyo 107-8388, Japan
Capital	Over ¥81,400 million
Number of Employees	9,737 (As of March 31, 2013)
Home Page	<a href="http://www.kajima.co.jp/english/">http://www.kajima.co.jp/english/</a>



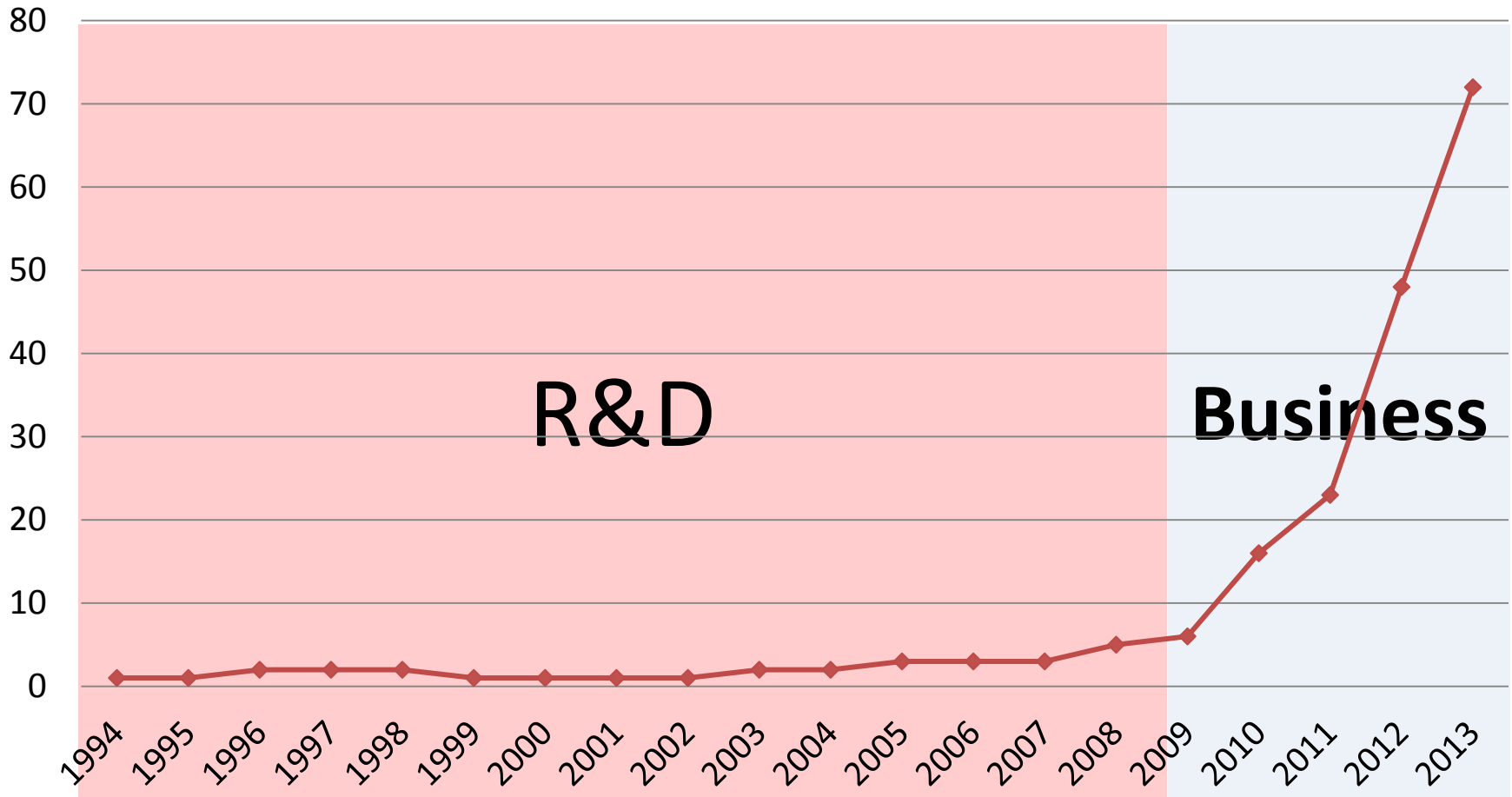
# 1. Kajima Company Profile (Sales by Region)



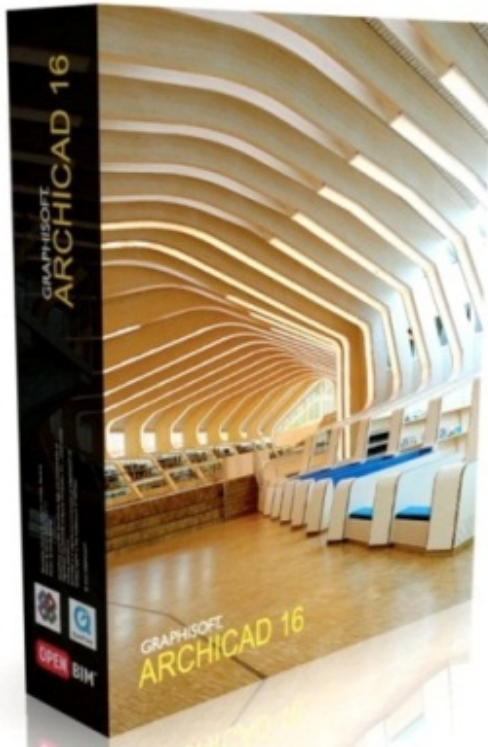
15% of sales is from Foreign Market

- Shifting to Global Market
- Using Global Workforce
- Accelerating Global Collaboration

# 2. Number of BIM projects



## 2. BIM software: ArchiCAD



GRAPHISOFT®

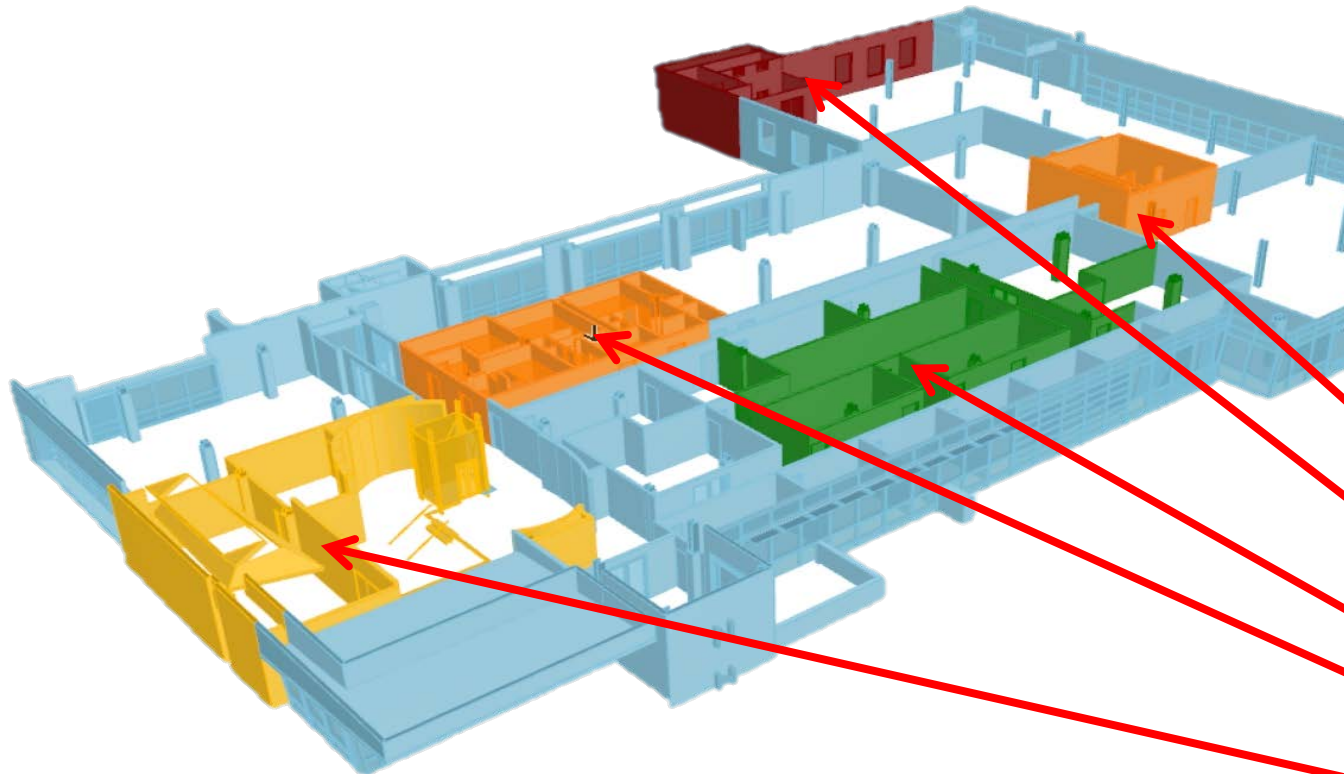


BIM Software  
「ArchiCAD」



BIM Server  
「TEAMWORK」

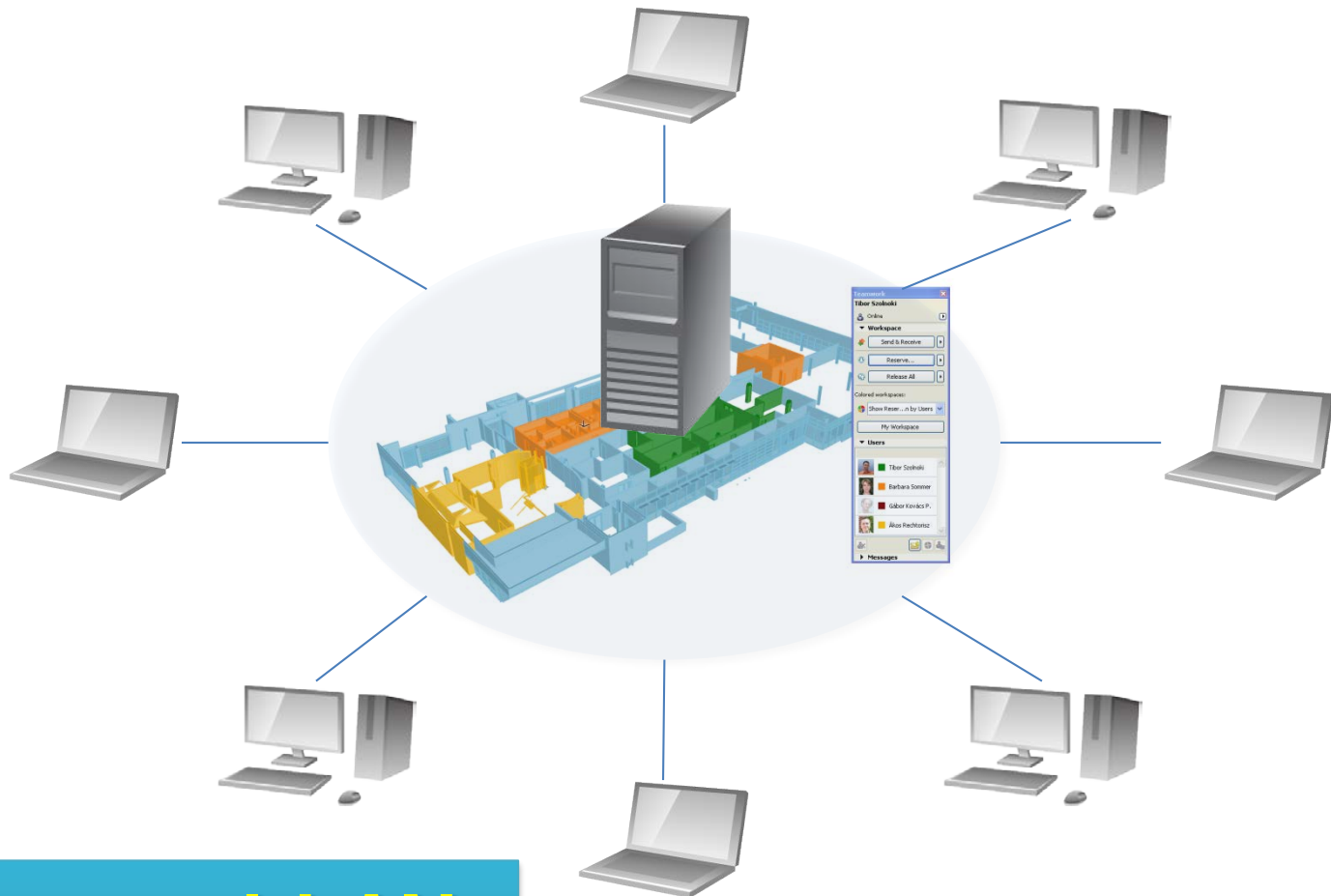
## 2. Collaboration with TEAMWORK



Up to 40 People work together

Work Share by Floors, Parts...

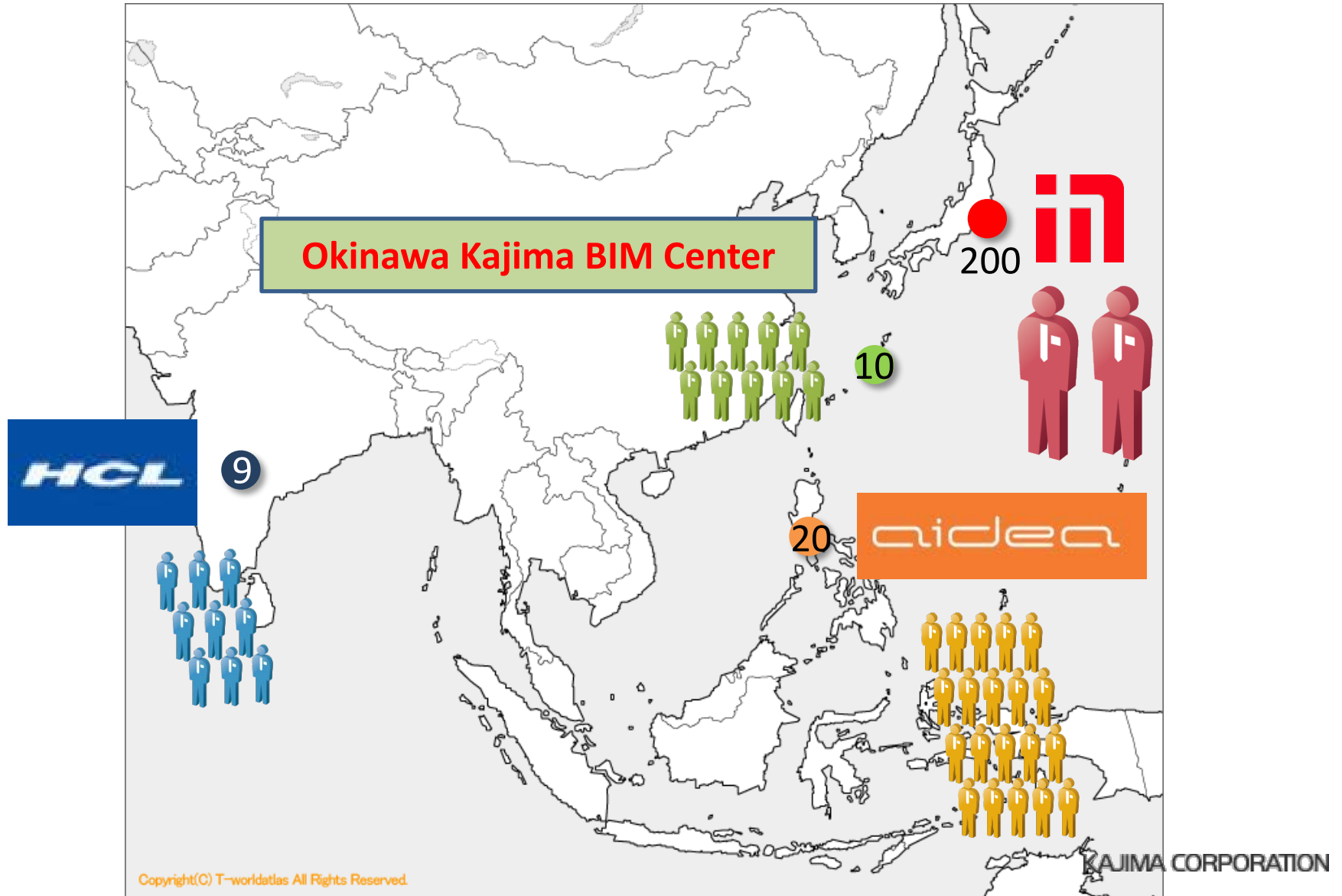
# 2. Collaboration with TEAMWORK



**BIM internal LAN**



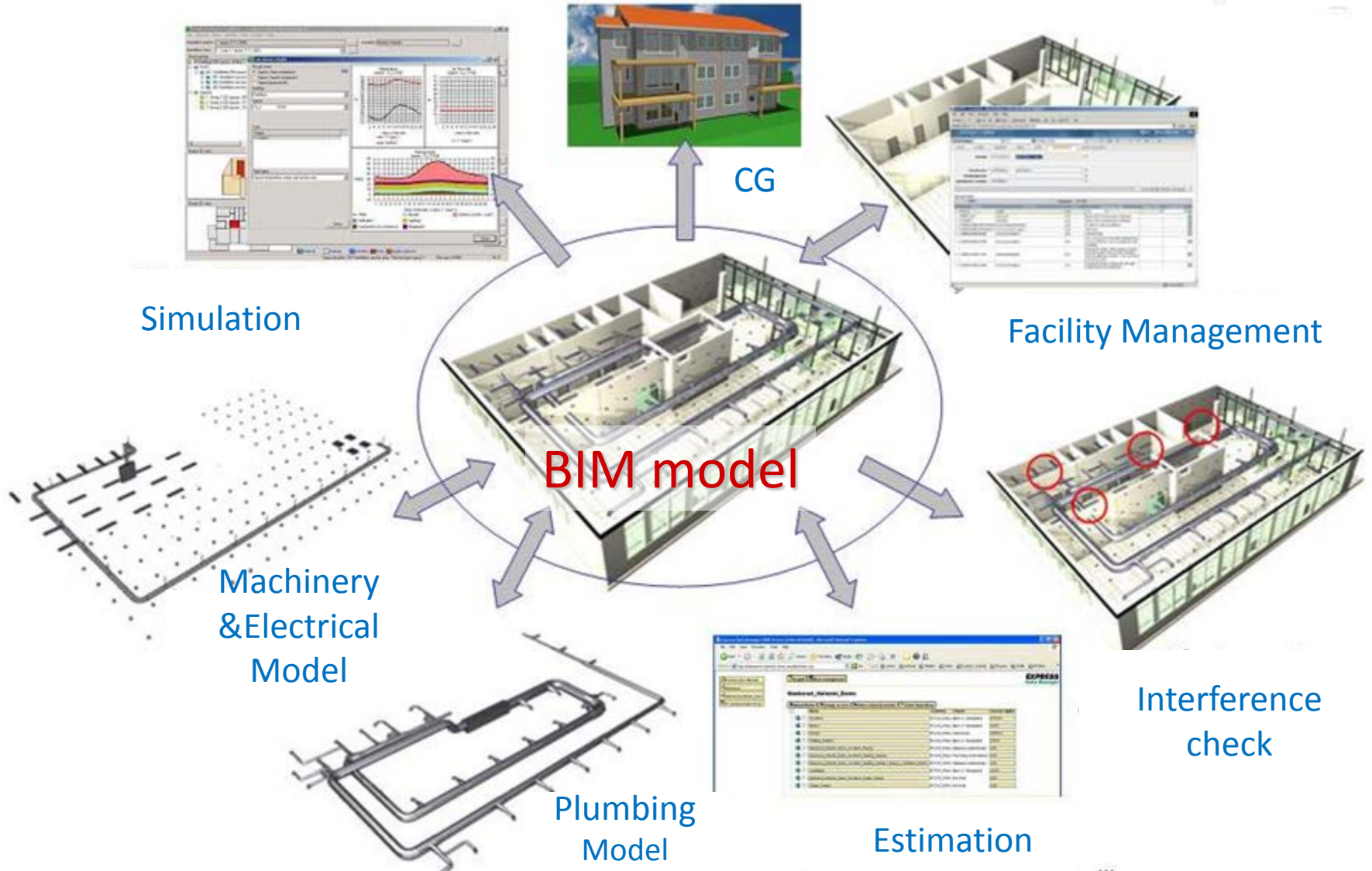
# 2. Human Network



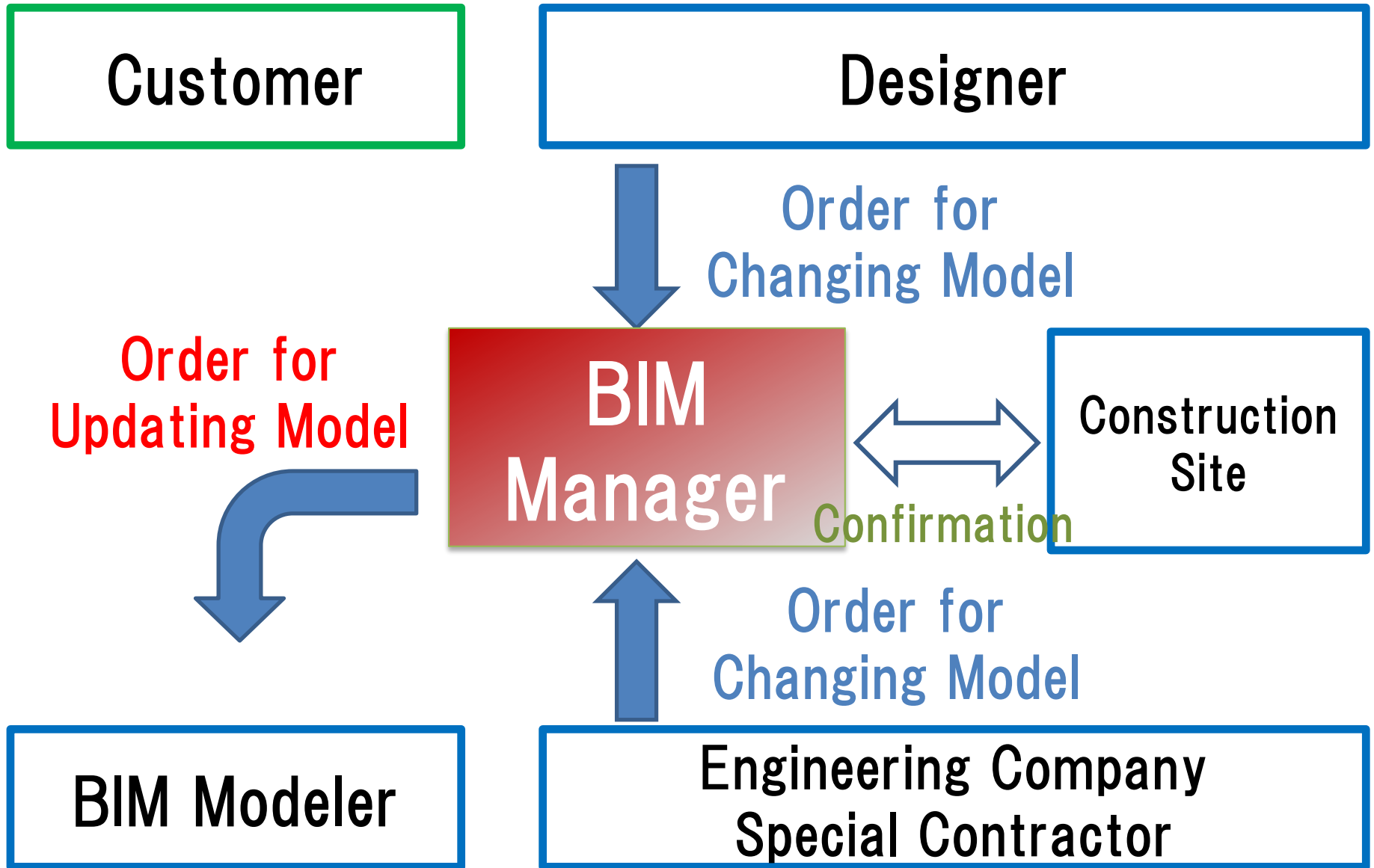
# 2. Production Network



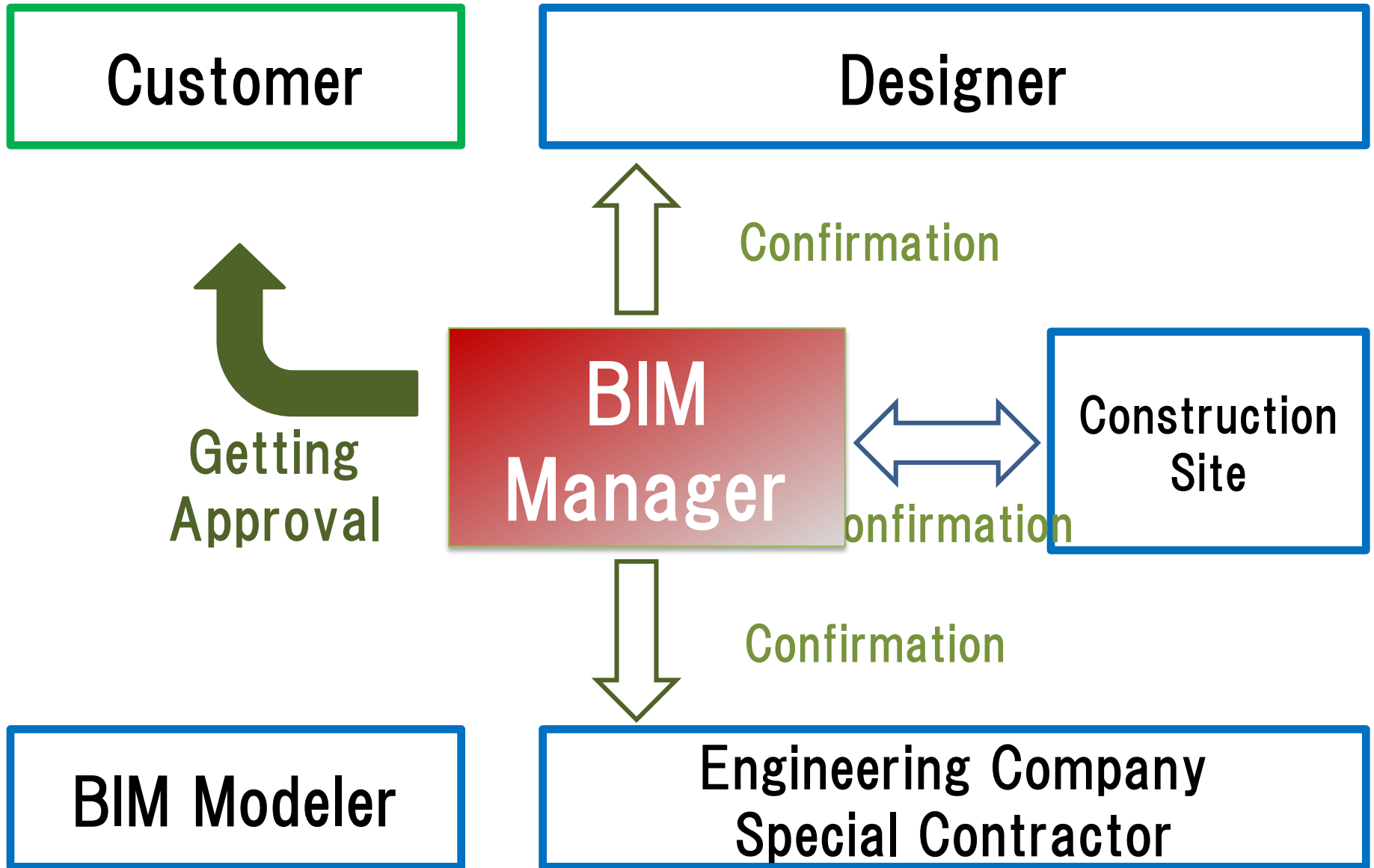
# 2. BIM Centric Data Flow



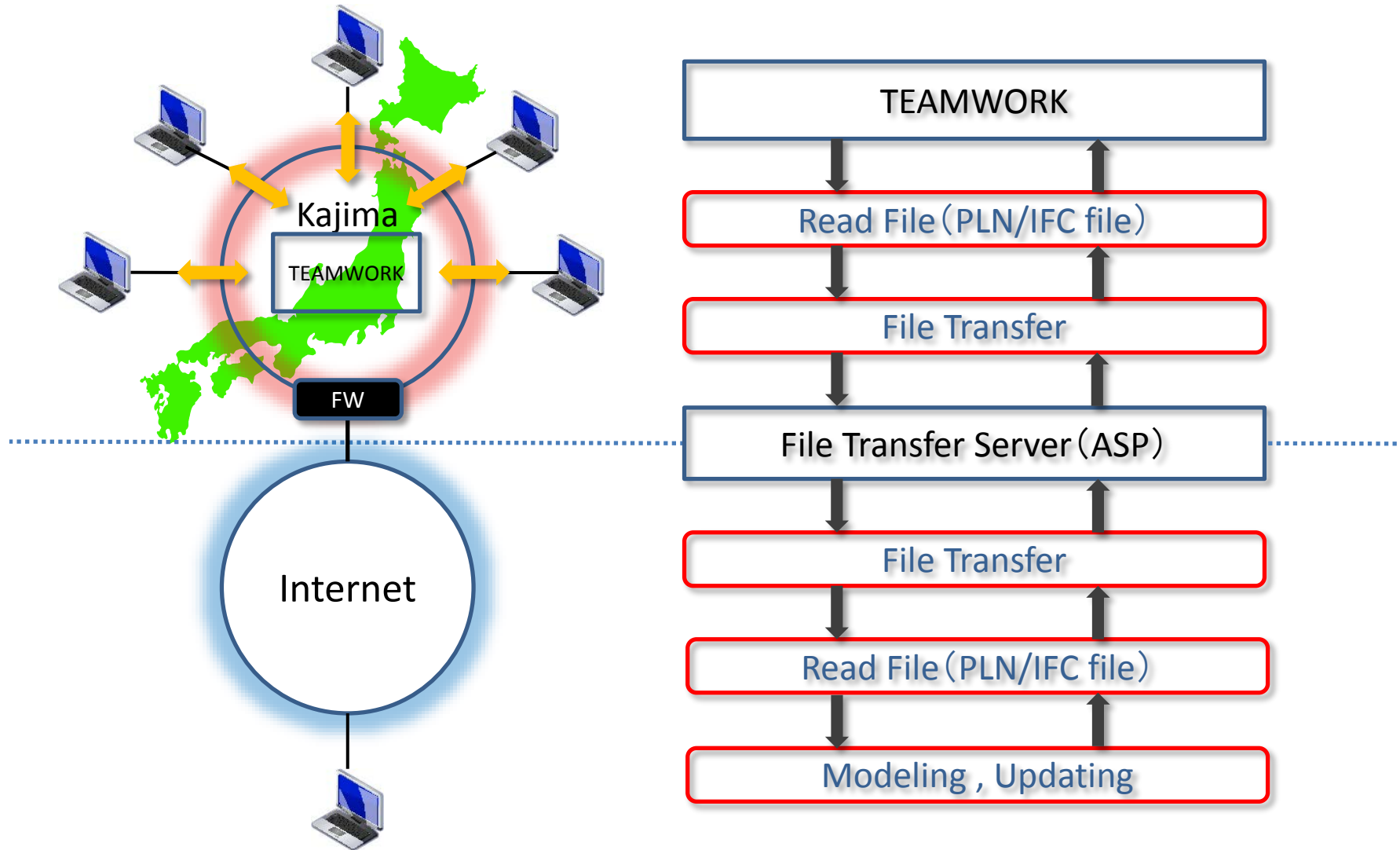
# 3. Problem(1): Exchanging BIM Data



# 3. Problem(1): Exchanging BIM Data



# 3. Problem(1): Exchanging BIM Data



# 3. Problem: TEAMWORK VS FireWall

『a **port** is an application-specific or process-specific software construct serving as a communications endpoint in a computer's host operating system.』

『A port is identified for each address and protocol by a 16-bit number, commonly known as the **port number**.』

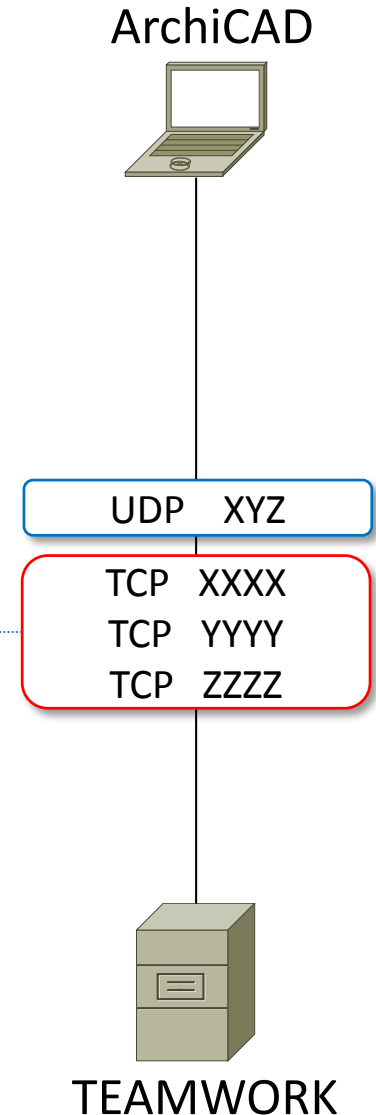
From Wikipedia

TCP Port	Service Name
21	ftp
23	telnet
25	smtp
80	http
443	https
...	...
...	...
1023	...
1024	...
...	...
...	...
...	...
...	...
49151	...
49152	...
...	...
...	...
...	...
...	...
65535	...

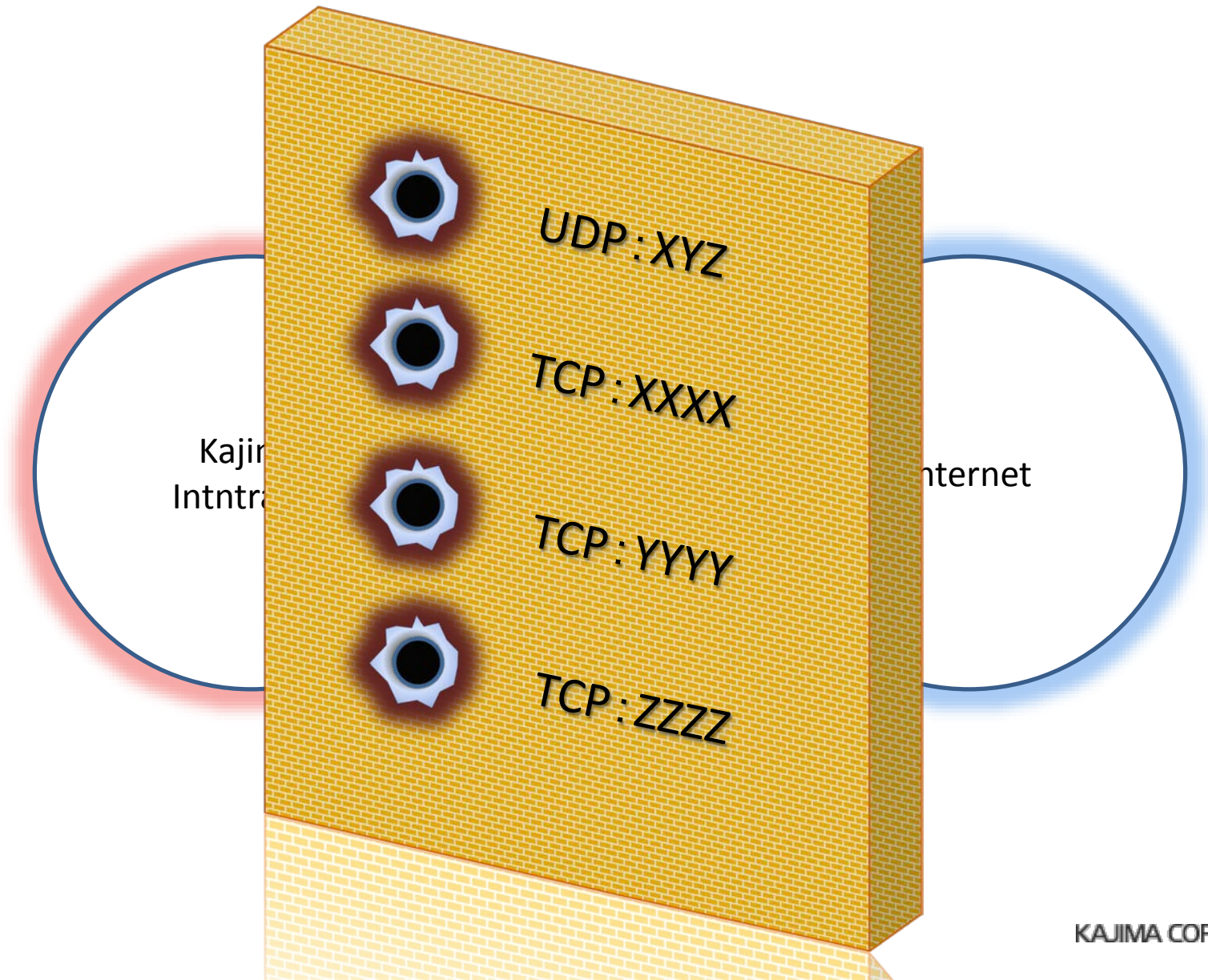
Well Known Ports

Reserved Ports

High Ports



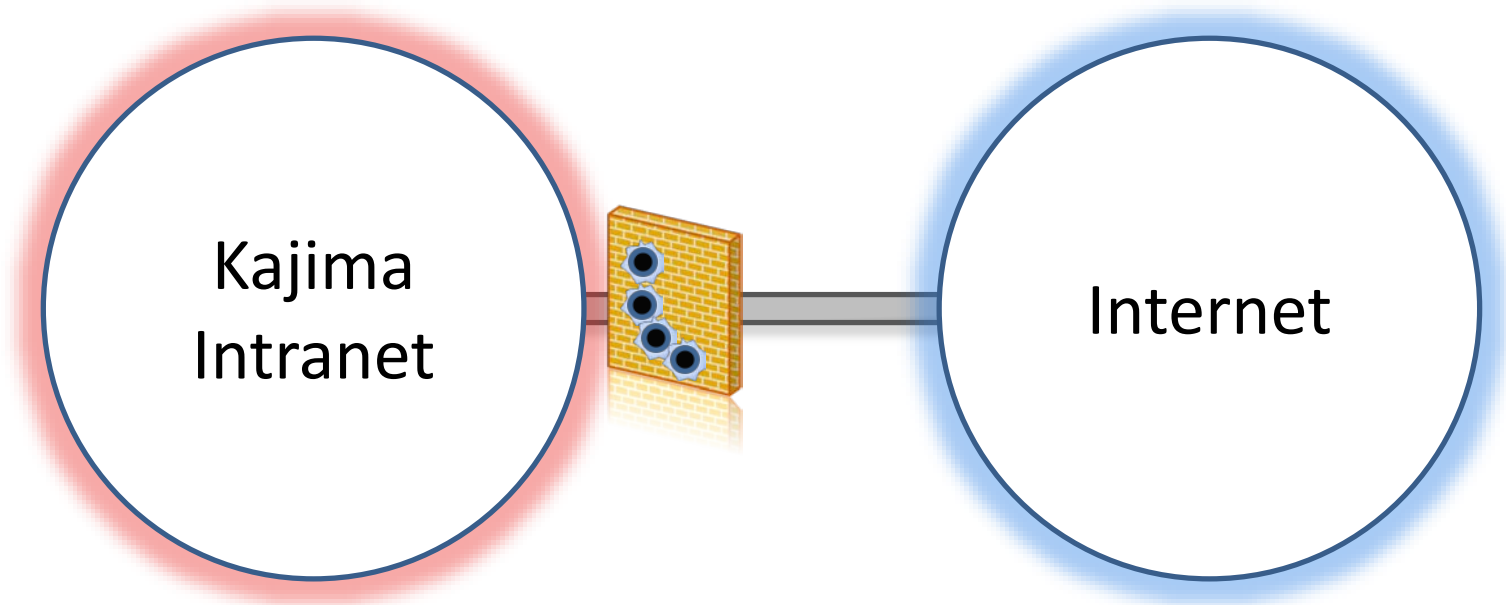
# 3. Problem(2): TEAMWORK VS FireWall





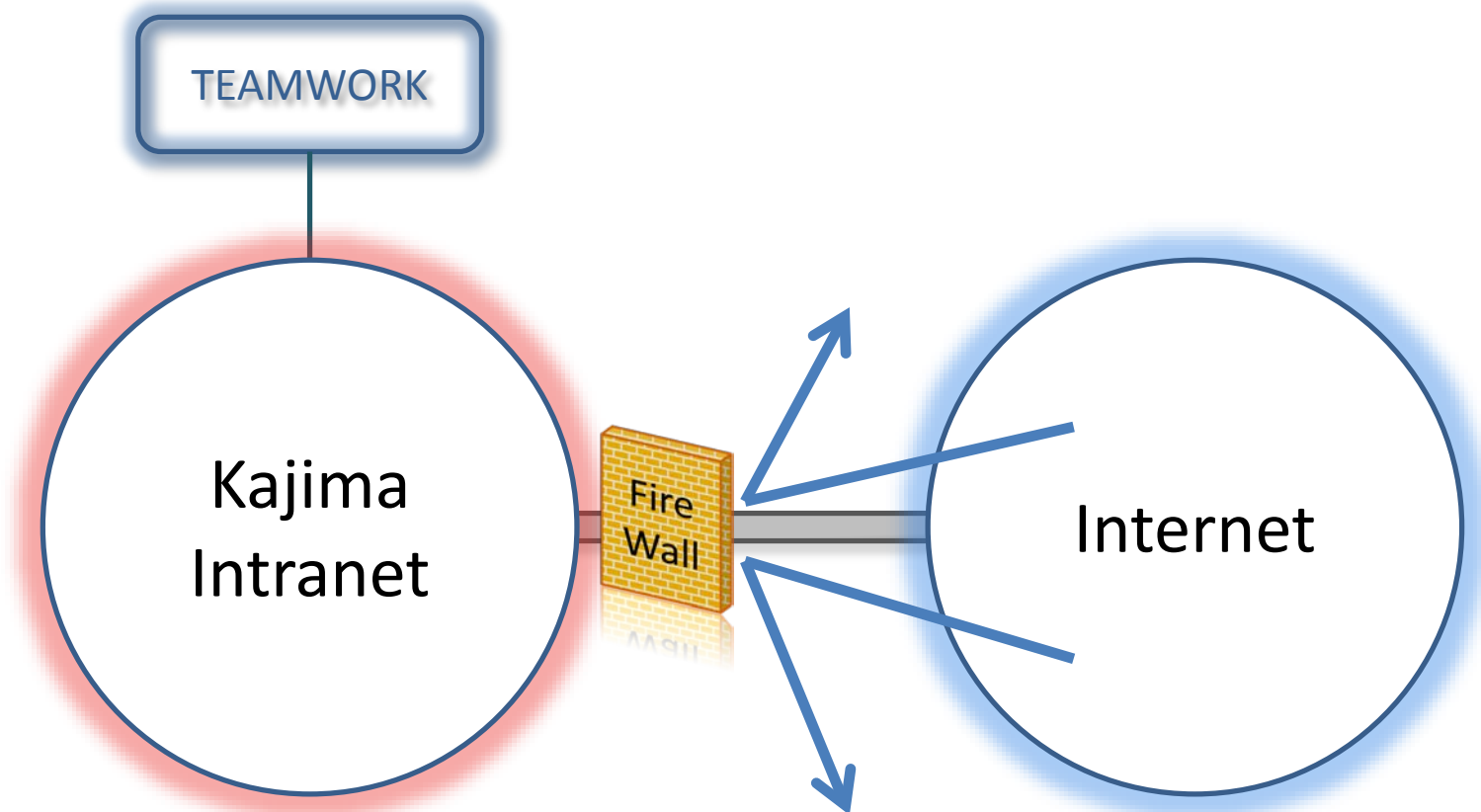
### 3. Problem(2): TEAMWORK VS FireWall

「Open some high ports on Firewall」

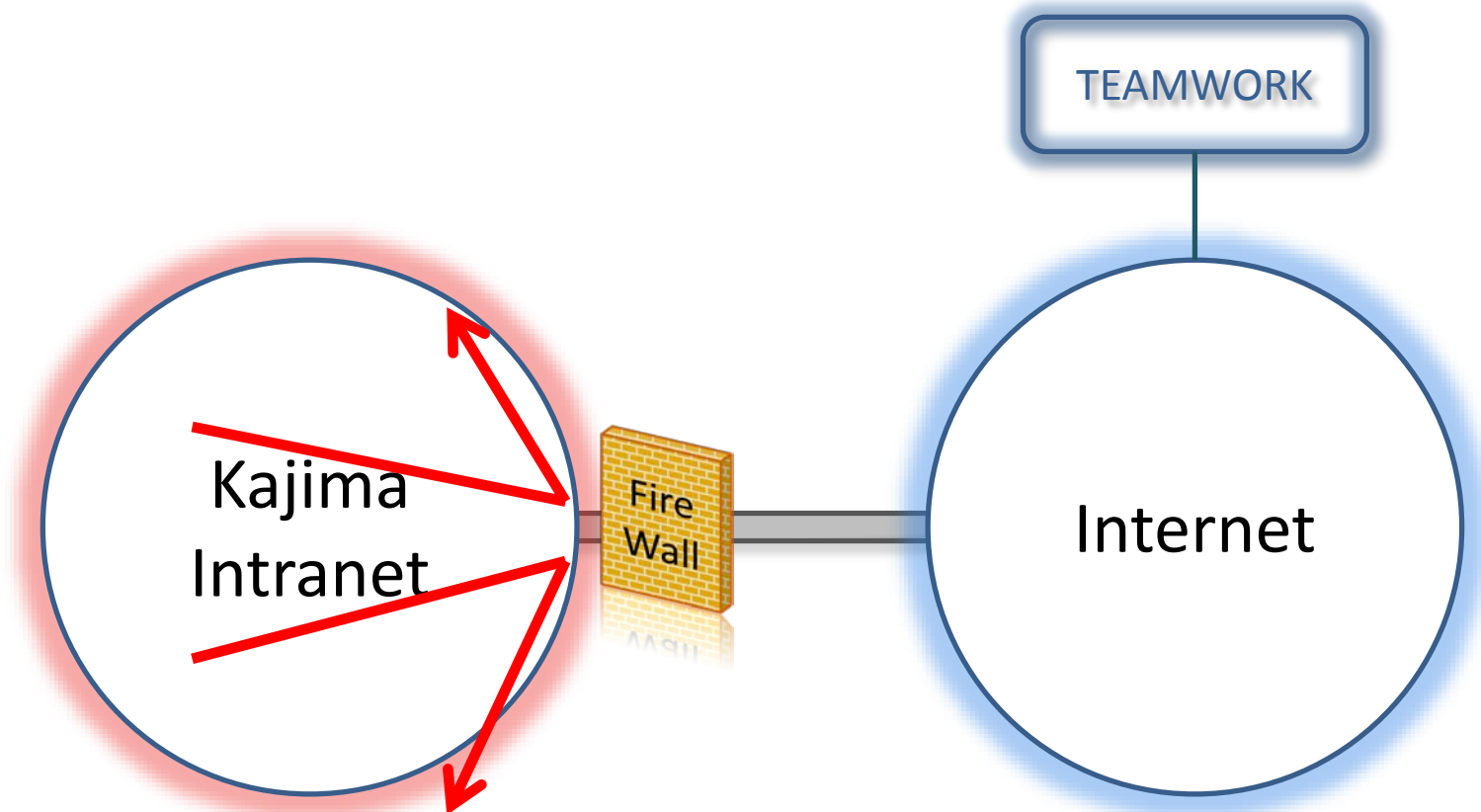


**NG for Security Reason**

# 3. Problem(2): TEAMWORK VS FireWall



# 3. Problem: TEAMWORK VS FireWall



# 3. Problems

- Limited access for TEAMWORK  
Only internal company use
- Time consuming for data transfer  
Downloading/Uploading BIM file
- Hard to update BIM file  
Many derived BIM files

➤ Inefficiency of BIM use

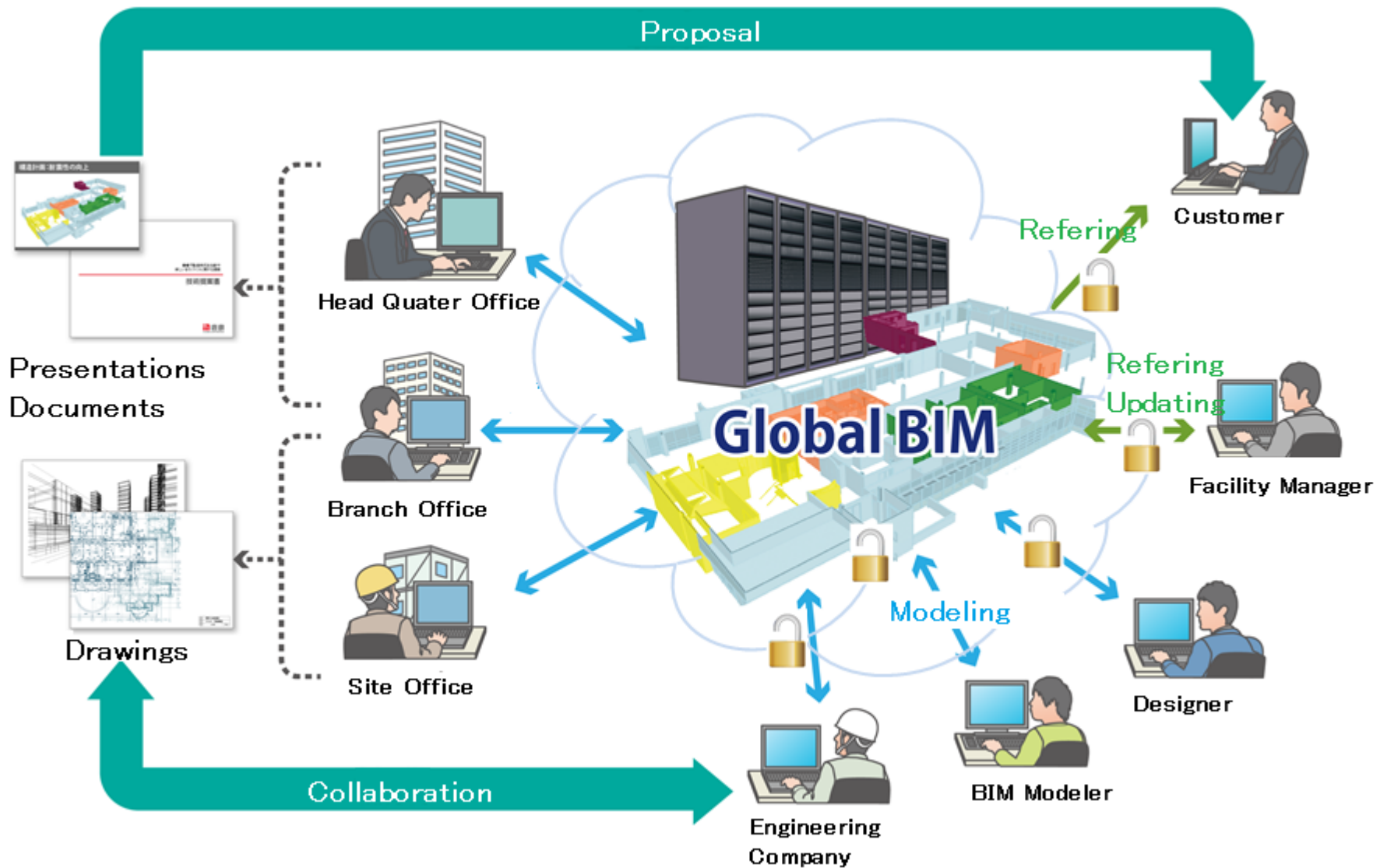
# 4. Required Specification of Global BIM

- Share BIM data with person from outside the company
  - Shorten time for modeling
  - Reduce time for file management
- Store BIM data safely for the long term
  - Robust Server & Network
  - Flexible and Expandable

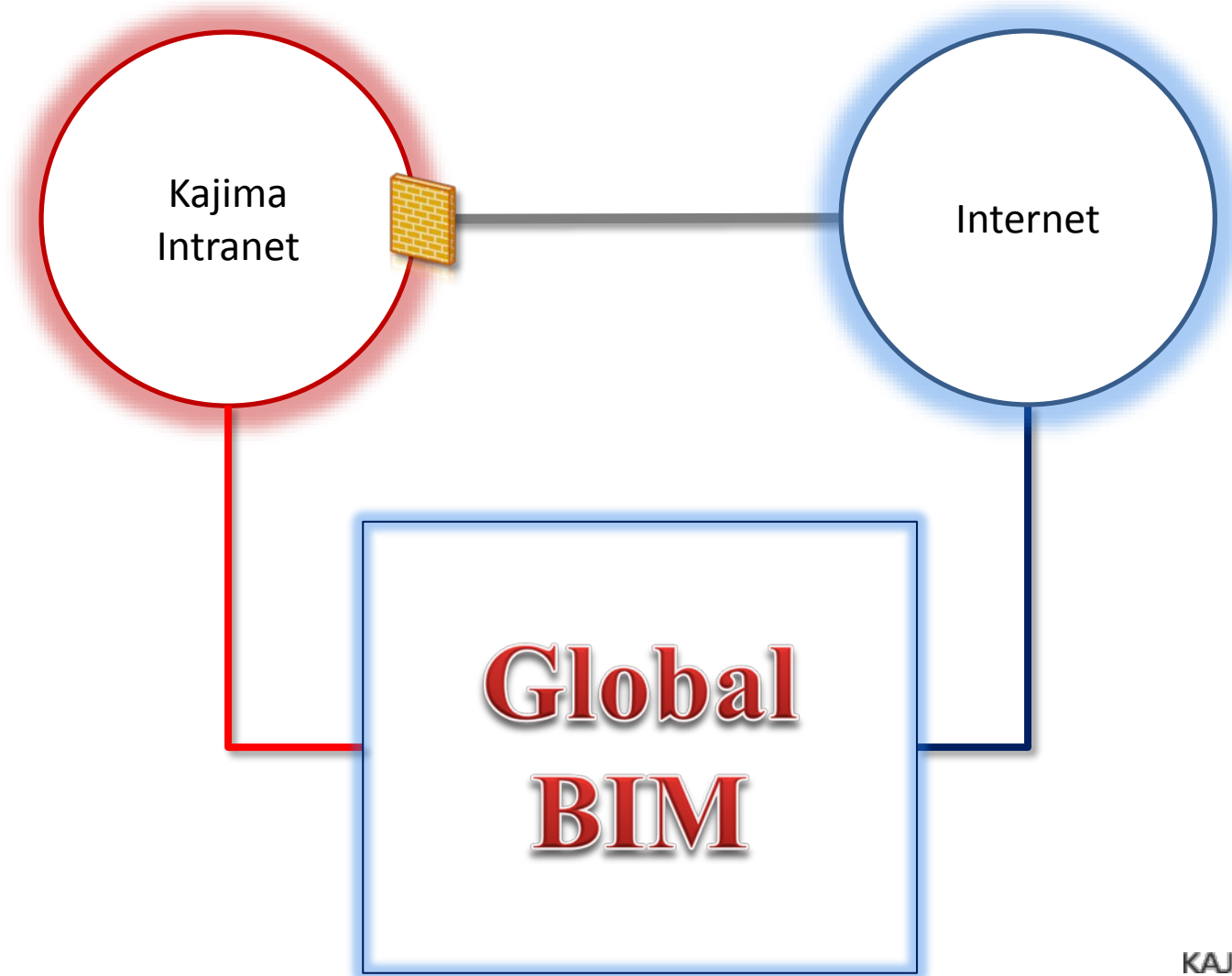
**Open & Secure**

**Sharable** BIM platform for construction projects

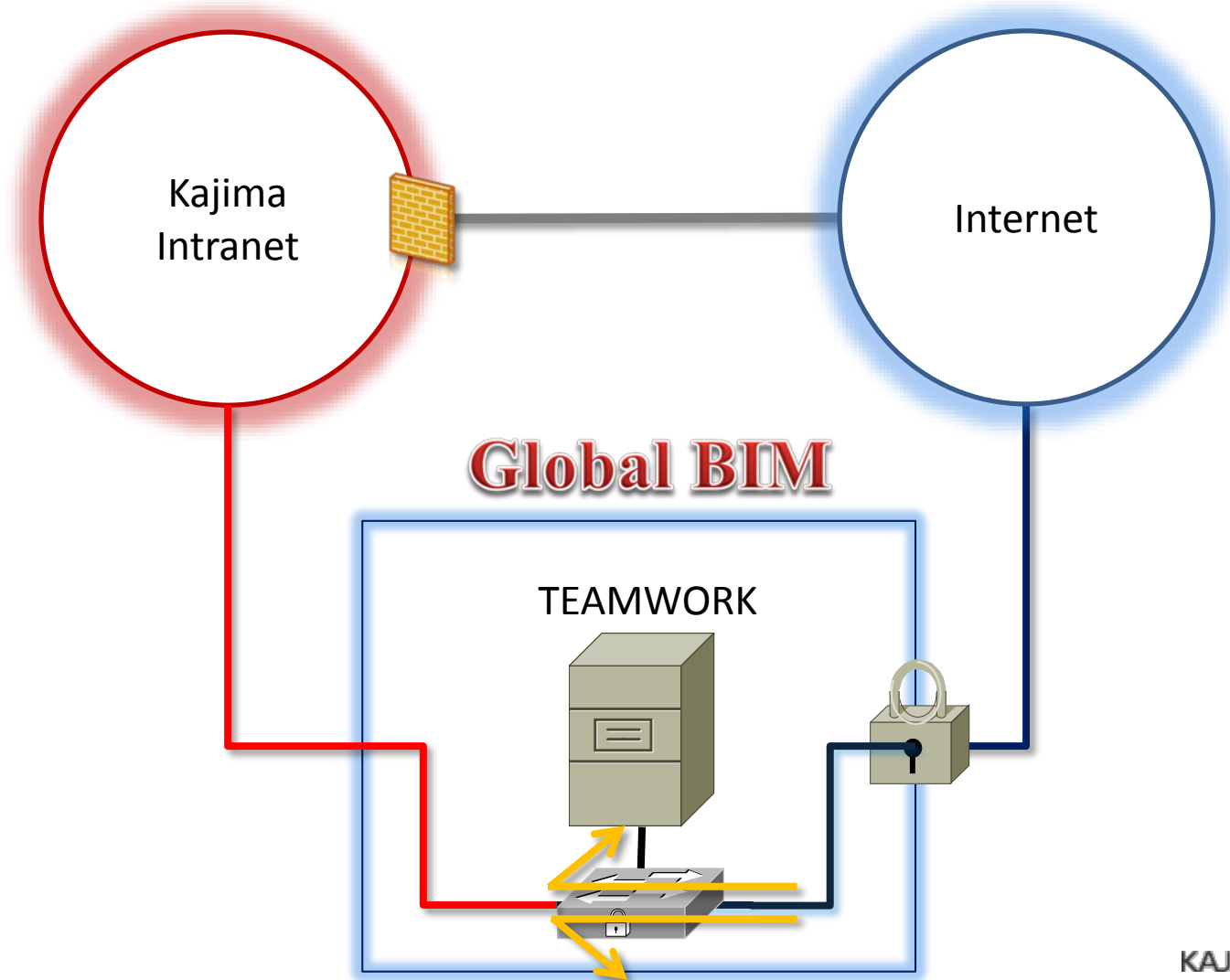
# 4. Deployment of Global BIM



# 4. Deployment of Global BIM (Configuration)

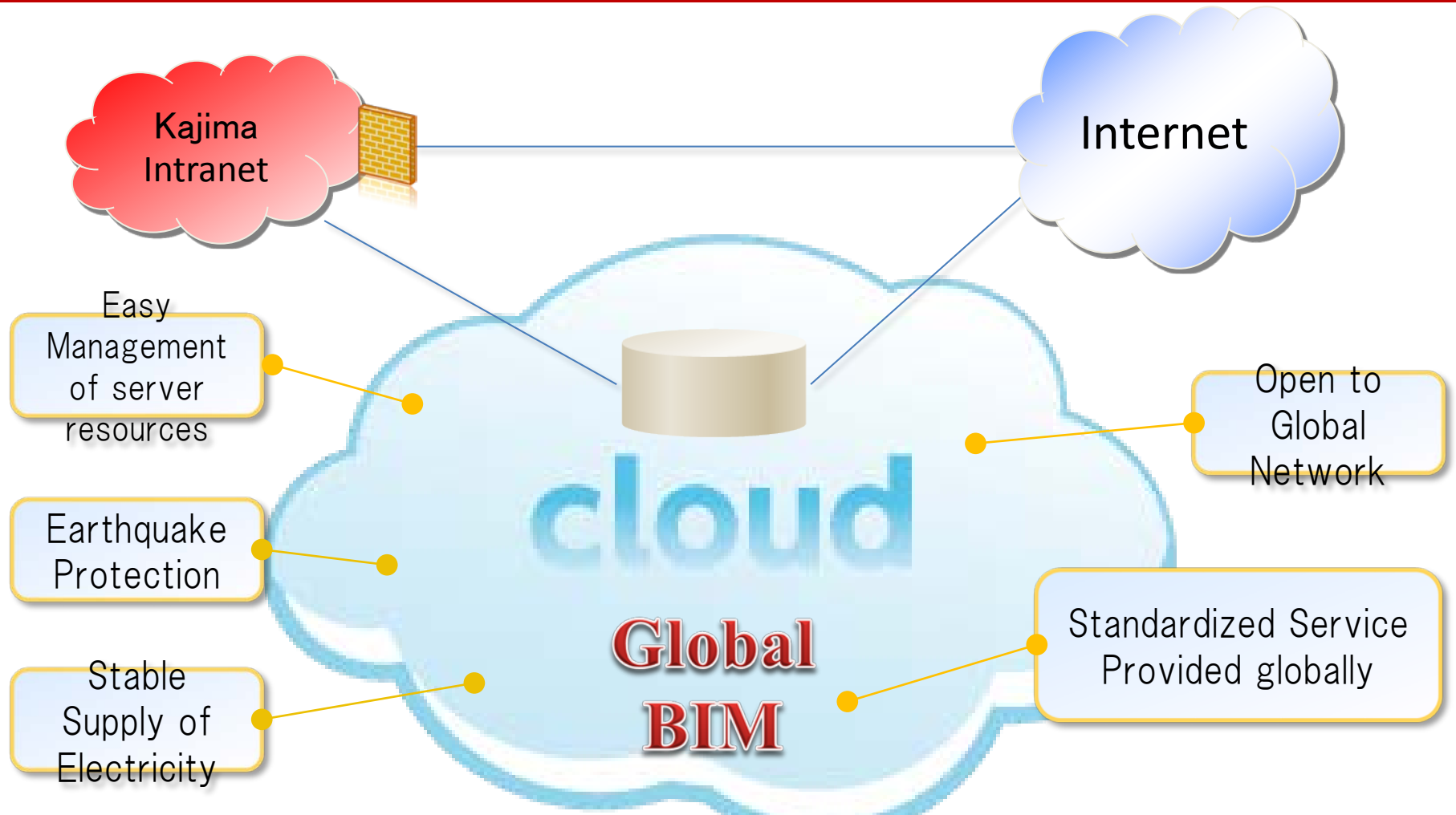


# 4. Deployment of Global BIM (Configuration)



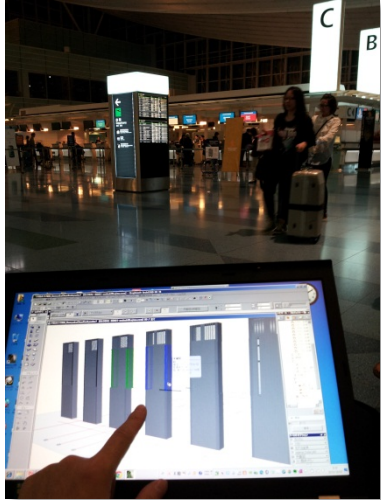


# 4. Deployment of Global BIM on Cloud



**Biz Hosting Enterprise Cloud**

# 5. Benefits of Global BIM



BIM platform for project members

- Transfer BIM data safely, efficiently

Shared Platform for internal/external users

- Shorten time for Modeling

No limit by Place and Time

- Accelerating usage of BIM globally
- Accelerating collaboration with modelers

Integrated Management of BIM Data

- Anytime available updated BIM data
- Using BIM data for FM & Renewal.



# 6. Future Works

- Global Backup of Project data
- Project based licensing  
(Deployment of Team Client)
- BIM for Tablet (Mobile tools)
- Cultivating BIM Manager
- Expanding Global Collaboration network



# 6. Future Works



**Expansion of usage of Global BIM**

BIM on Cloud  
Introduction of **Global BIM**

**Thank you!**

**KAJIMA**