

# VISUALIZE, CONTROL AND GENERATE VALUE

## INTERNET ACCESS MANAGEMENT



Sangfor Technologies Co., Ltd.  
[www.sangfor.com](http://www.sangfor.com)

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- **Market Trend**
  - Bring Your Own Device (BYOD)
  - Wi-Fi Environment
  - User Online Behavior
  - Value of User Behaviors' Data
- SANGFOR Internet Access Management Concept
- SANGFOR IAM – Visualize, Control and Generate Value

# Bring Your Own Device



Quicker Response

Better  
Satisfaction

Lower Cost for  
Enterprises

**Gartner Predicts: By 2017, Half of Employers will Require Employees to Supply Their Own Device for Work Purposes !**

# Wireless Internet Access

## Businesses using Wi-Fi

73% of the businesses in Hong Kong are providing WLAN connection at work (2013).

*Source: Go-Globe*

## Increasing no. of devices connected through Wi-Fi

In 2020, more than 24 billion devices will be connected to Internet.

*Source: Gigaom*



## Free Wi-Fi is not free

More and more free wireless networks are available around us. However when employees use these wireless network with company laptops, the data stored on these becomes potentially vulnerable to any malicious users.

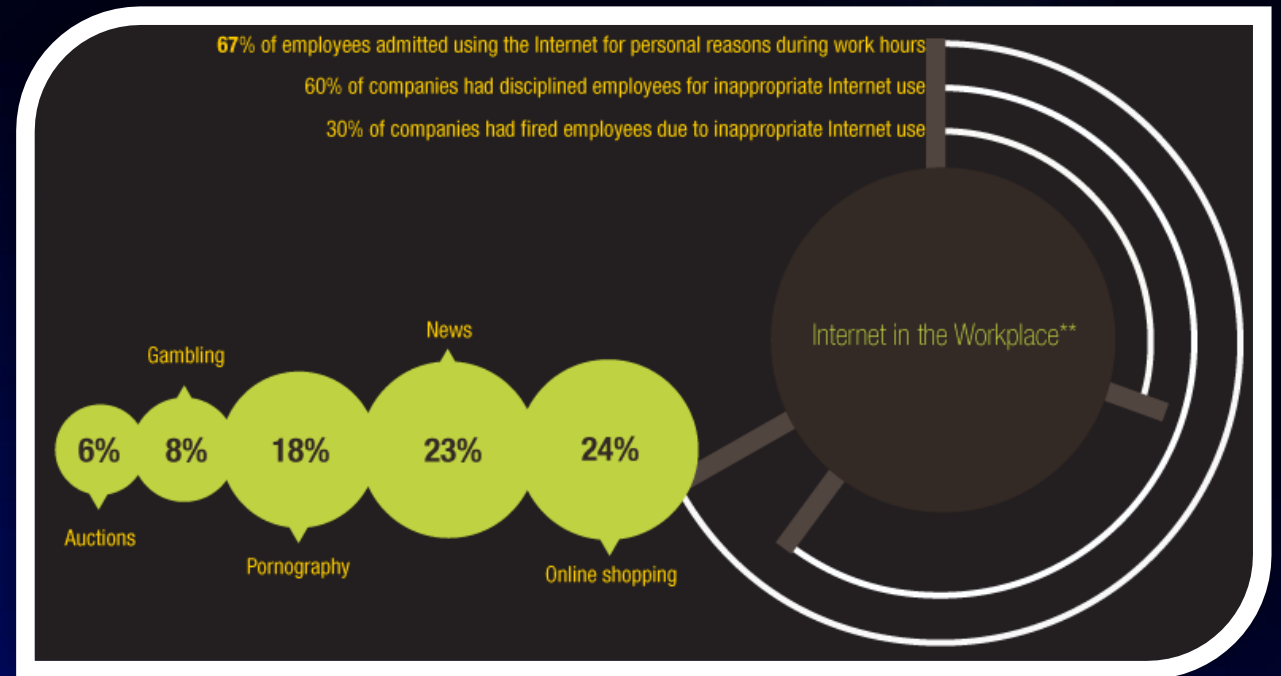
## Most of the Wi-Fi are vulnerable !

50% of open Wi-Fi networks are susceptible to abuse !

*Source: Purple Wi-Fi*

## User online behavior

- 70% of all web traffic to Internet pornography sites occurs during the work hours
- Non-work-related Internet surfing results in up to a 40% loss in productivity each year at American businesses.
- According to a survey by IDC, 30% to 40% of Internet access is spent on non-work-related browsing, and a staggering 60% of all online purchases are made during working hours.
- According to a Survey by Harris (US Company), most of the employees wasted time was on internet (39%) and social media (38%).



Source: [www.techaddiction.ca](http://www.techaddiction.ca)

**For large/medium size companies, employees' work productivity loss can be up to millions of US\$ !**

# Encrypted Data Bypass Content Filter



## Https Websites

- According to Gartner, more than 50% of websites are using https.
- Illegal websites use encryption to hide contents.



## SSL Mail

- Email providers such as Gmail, Yahoo, Outlook now provide encrypted connection to their users.



## SSL VPN

- Free VPN software such as UltraSurf, Encrypted VPN, etc. allow users to surf anonymously on the internet.



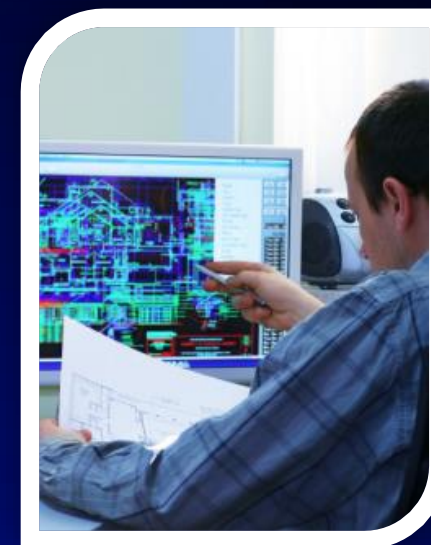
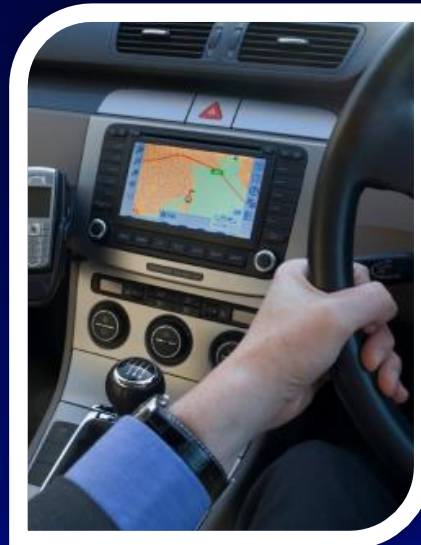
## Social media

- Google+, Facebook, Twitter, Youtube, etc. are now encrypting their content to protect user's privacy.

## Big data value

*Big data - large pools of data that can be captured, communicated, aggregated, stored, and analyzed—is now part of every sector and function of the global economy. Like other essential factors of production such as hard assets and human capital, it is increasingly the case that much of modern economic activity, innovation, and growth simply couldn't take place without data.*

McKinsey Global Institute



# Massive Online Behavior Data.

You Can't Put a Price on Data !

Employees	Behavior Data
200	240G
500	600G
20000	60T



**The amount of information regarding online behavior log is enormous:** User identities, phone numbers, WeChat IDs and other online accounts, but also includes Internet behaviors like browsed sites, search keywords, messages/emails sent, visited forums, microblogs and other generated logs.



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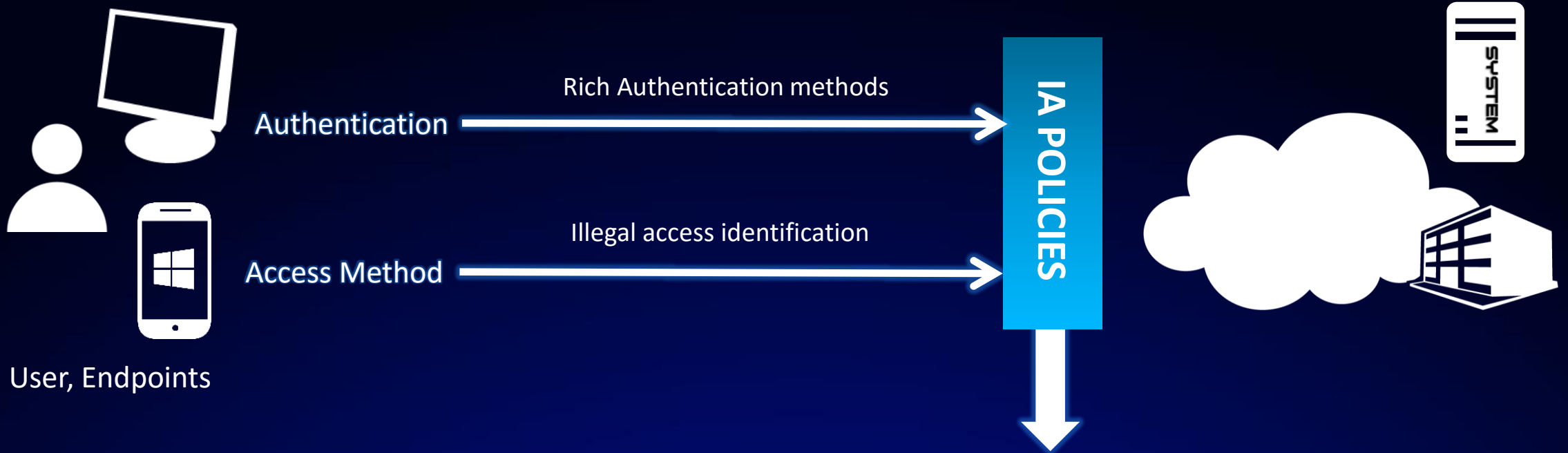
- Market Trend
- **SANGFOR Internet Access Management Concept**
  - Visualize and Control Users, Apps and Traffic
  - Generate Value From Big Data Analytics
- SANGFOR IAM – Visualize, Control and Generate Value

# Sangfor's Concept

## Visible, Controllable and Valuable



# Users & Endpoints' Visibility and Control



Based on users, endpoints and access policies, ensuring the overall visibility & control of the network.

# Users and Endpoints' Visibility and Control

- Integrated with Existing Access Management Systems and Scenarios

## Scenarios

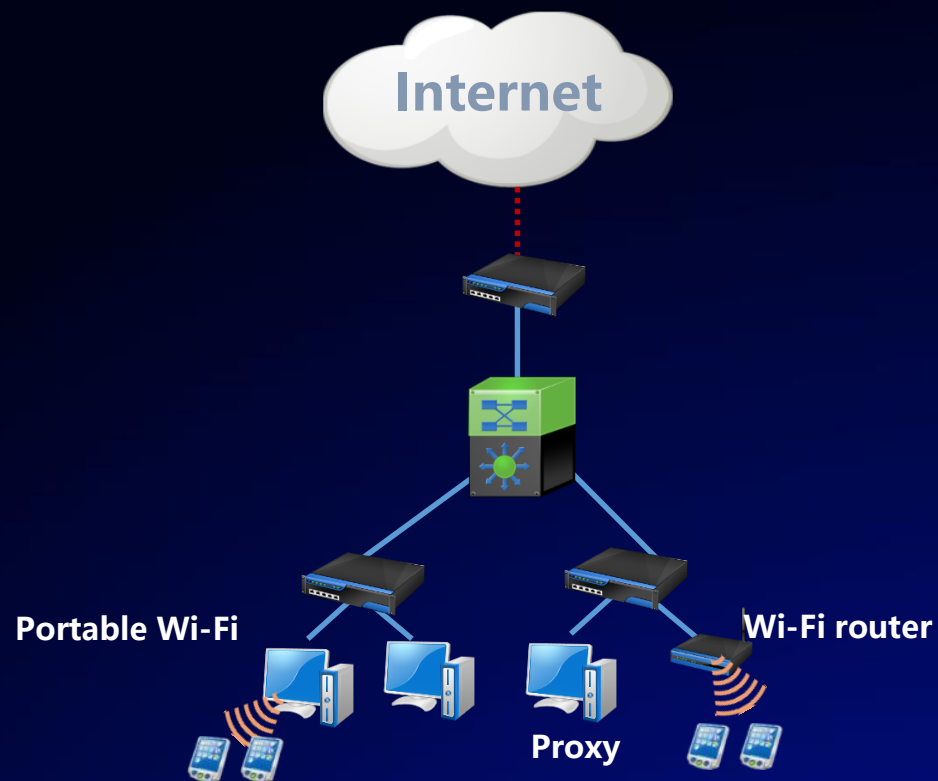
- User/Pass: OA system
- SMS: Phone NO. value-added marketing
- Facebook: increasing NO. of followers
- QR Code: Guest

## Existing systems

- Active directory
- Radius server
- SAM
- CAMS
- POP3
- Other Database

# Users and Endpoints' Visibility and Control

- Identify Illegal Access



- **Fast Detection**
  - Portable Wi-Fi Hotspots/Routers
  - Illegal Proxy
  - Other Network Sharing
- **Instant Block**
  - Traffic from/to Portable Wi-Fi
  - Traffic from/to Illegal Proxy
- **Fast Alert**
  - Send Alert to Admin with Critical Info.

# Visibility & Control of Application and Content

## App identification

- Comprehensive URL & App Signature DB
- Continuous & Rapid Update

App Recognition and Control

## Biz Perspective App Control

- Business Application Signature
  - High bandwidth consumption
  - High disclosure risk category
  - High Security Risk
  - Etc.

Biz Perspective App Control

## More Granular App Control

- More functions of applications recognition
  - Block risky behavior
  - Allow normal behavior

More Granular App Control

## Prevent Illegal Content to Bypass Regulations

- Proxy software
- SSL (Encrypted page, email, etc.)

Applications Content Control

# Traffic Visibility & Control

## More Humane Traffic Control Policy

- From single to multi-level policies strategic planning is becoming more flexible.
- From static policy to dynamic policy to maximize the user experience.
- choke/unchoke mechanism for better business and experience.

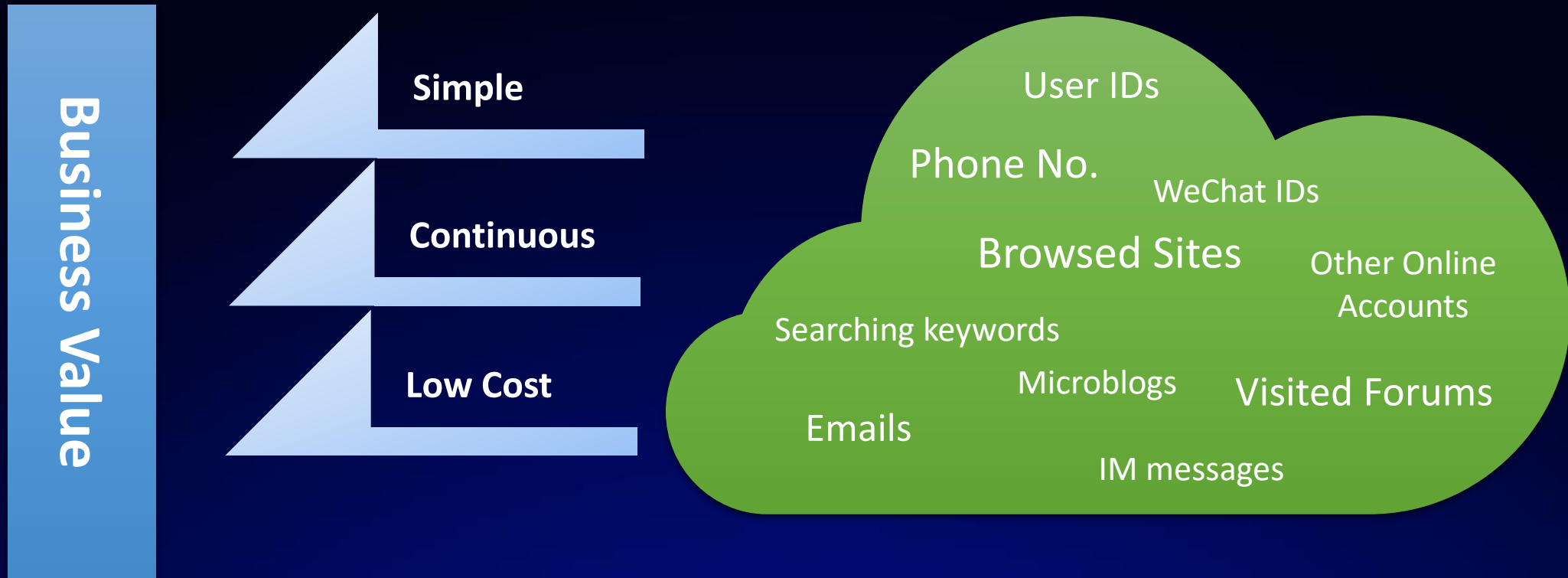
More  
Comprehensive &  
Accurate

Better  
User Experience

## Traffic Identification are more Complete & with Better Accuracy

- Comprehensive application identification, especially for P2P applications.
  - Full identify P2P traffic flow
  - Accurate control of P2P downstream traffic
- Multiple dimensions traffic statistics
  - Based on the user, terminal type, file type, time, etc.

# Generate Value Through Data – Continuously Mining Invaluable Business Value





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- Market Trend
- SANGFOR Internet Access Management Concept
- **SANGFOR IAM – Visualize, Control and Generate Value**



# Overview of IAM Solution

## Who



- Staff
- Guests
- Devices
- Locations

## What



- URLs
- Emails
- Apps
- Posts

## How



- Block
- Control
- Optimize
- Report

# Unified Portal for Access Authentication

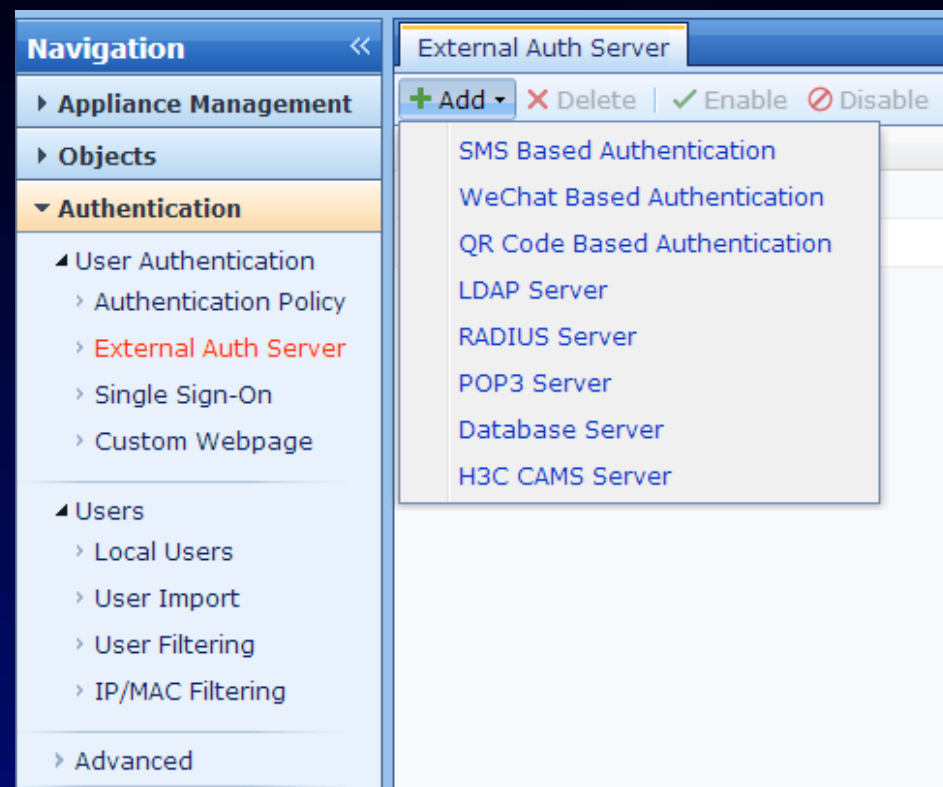
## Staff



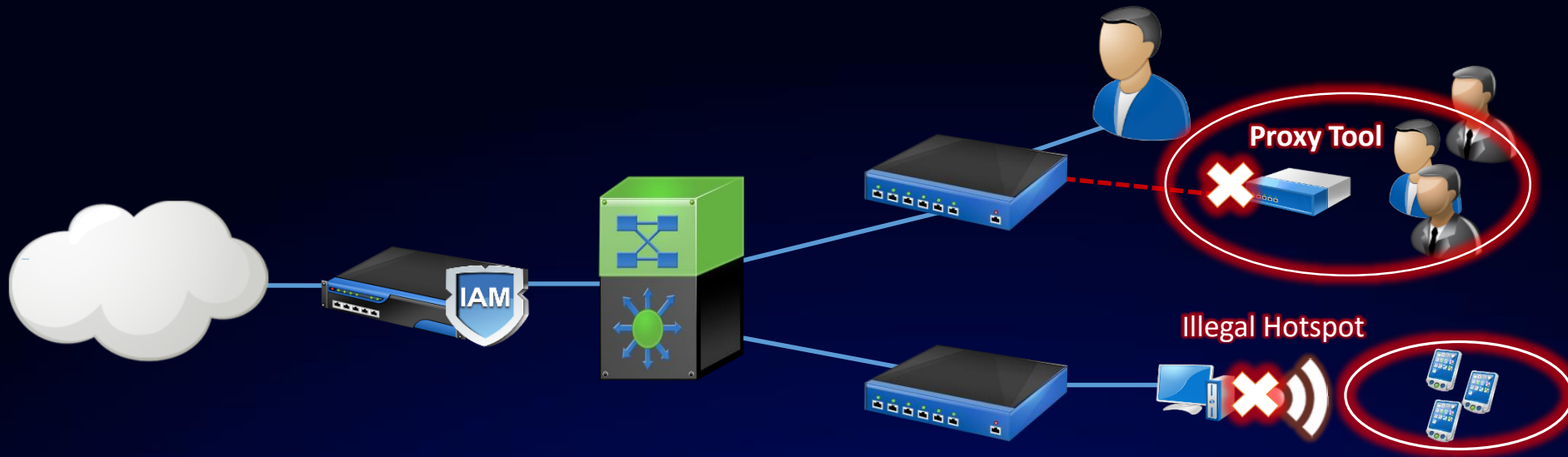
## Guests



## For Public



# Control of Network Sharing



# Location Based Access Control

## Library:

Mobile terminal access is prohibited

## Dormitory:

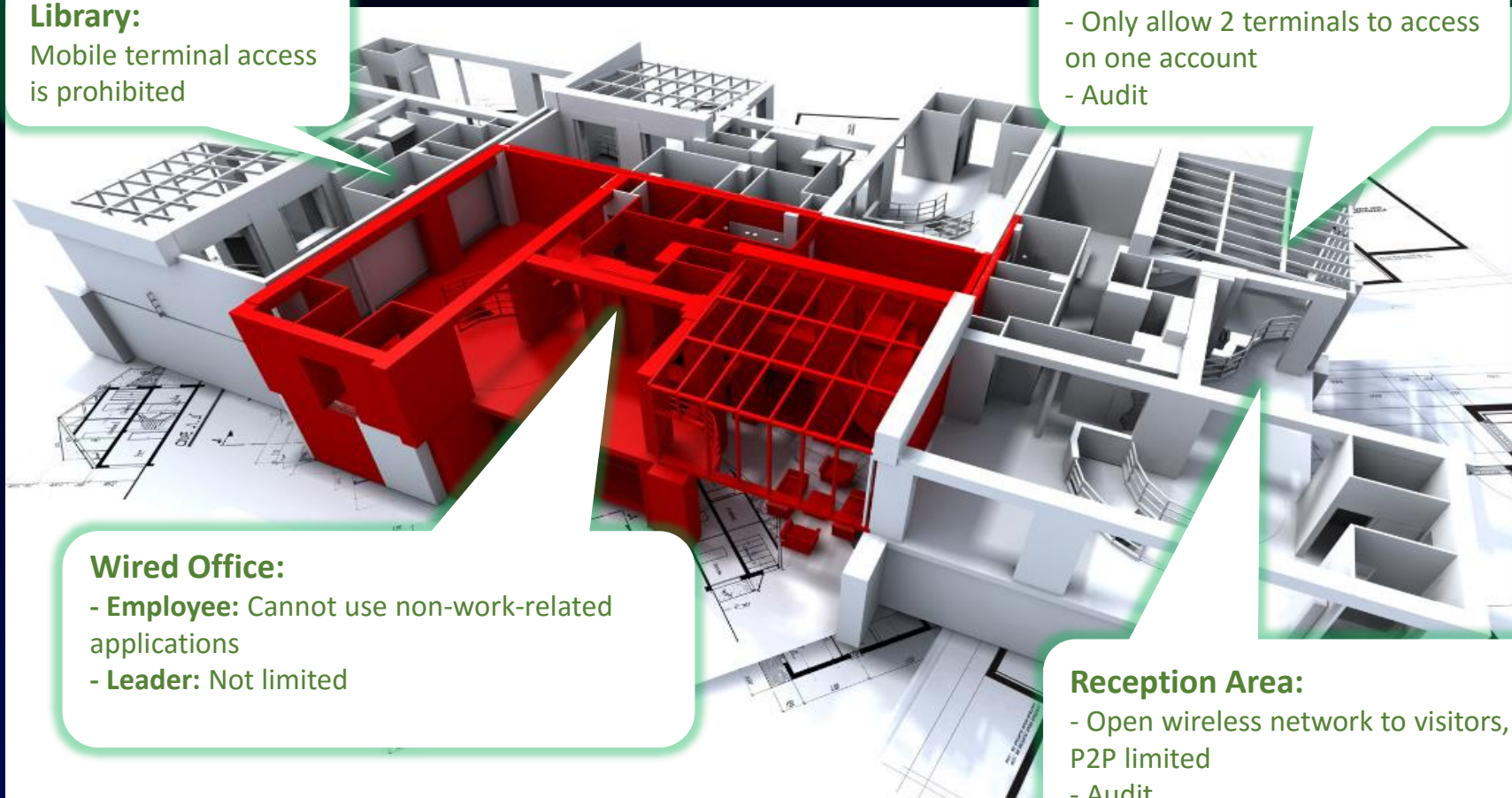
- Only allow 2 terminals to access on one account
- Audit

## Wired Office:

- **Employee:** Cannot use non-work-related applications
- **Leader:** Not limited

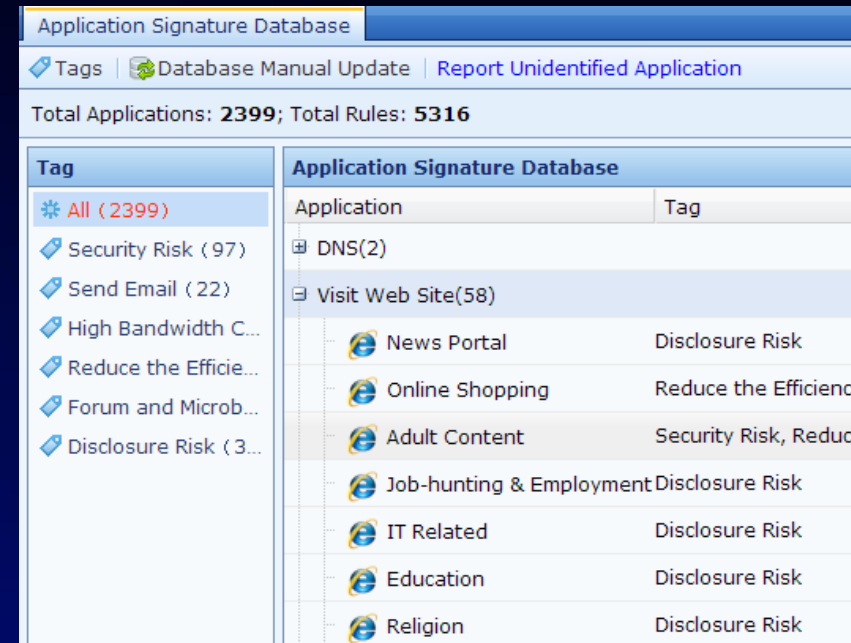
## Reception Area:

- Open wireless network to visitors, P2P limited
- Audit



# Application Signature Database

## URL Filtering & Granular Application Control



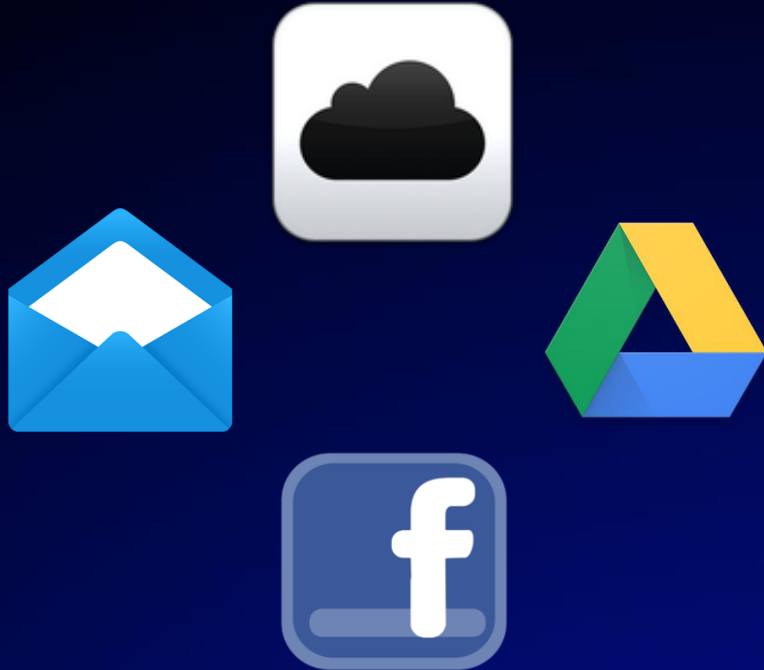
Application Signature Database

Tags | Database Manual Update | Report Unidentified Application

Total Applications: **2399**; Total Rules: **5316**

Tag	Application	Tag
All (2399)		
Security Risk (97)		
Send Email (22)		
High Bandwidth C...		
Reduce the Efficie...		
Forum and Microb...		
Disclosure Risk (3...		
	DNS(2)	
	Visit Web Site(58)	
	News Portal	Disclosure Risk
	Online Shopping	Reduce the Efficiency
	Adult Content	Security Risk, Reduc...
	Job-hunting & Employment	Disclosure Risk
	IT Related	Disclosure Risk
	Education	Disclosure Risk
	Religion	Disclosure Risk

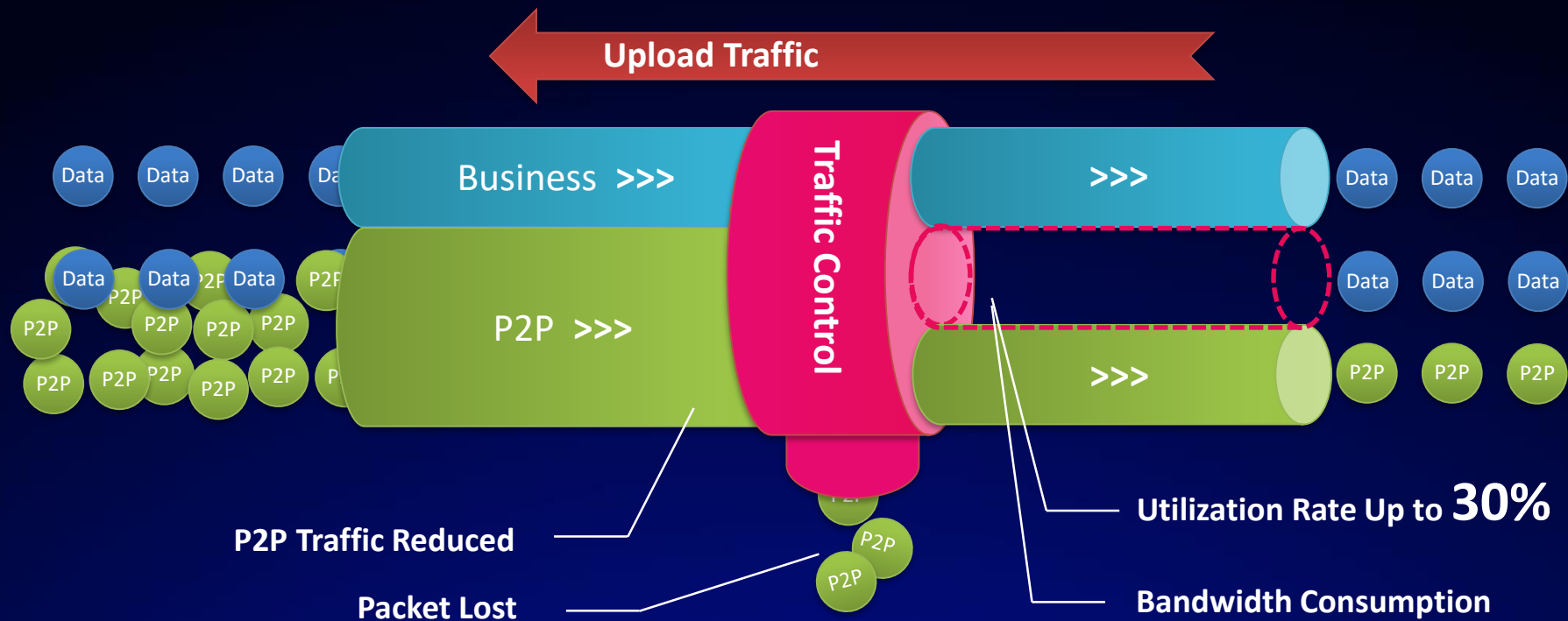
## Granularly Application Control



- Login
- Upload
- Download
- Post Message

# Intellective P2P Traffic Control

There is correlation between the upload rate and download rate for P2P. IAM CAN granularly control the download rate by restraining the upload traffic !

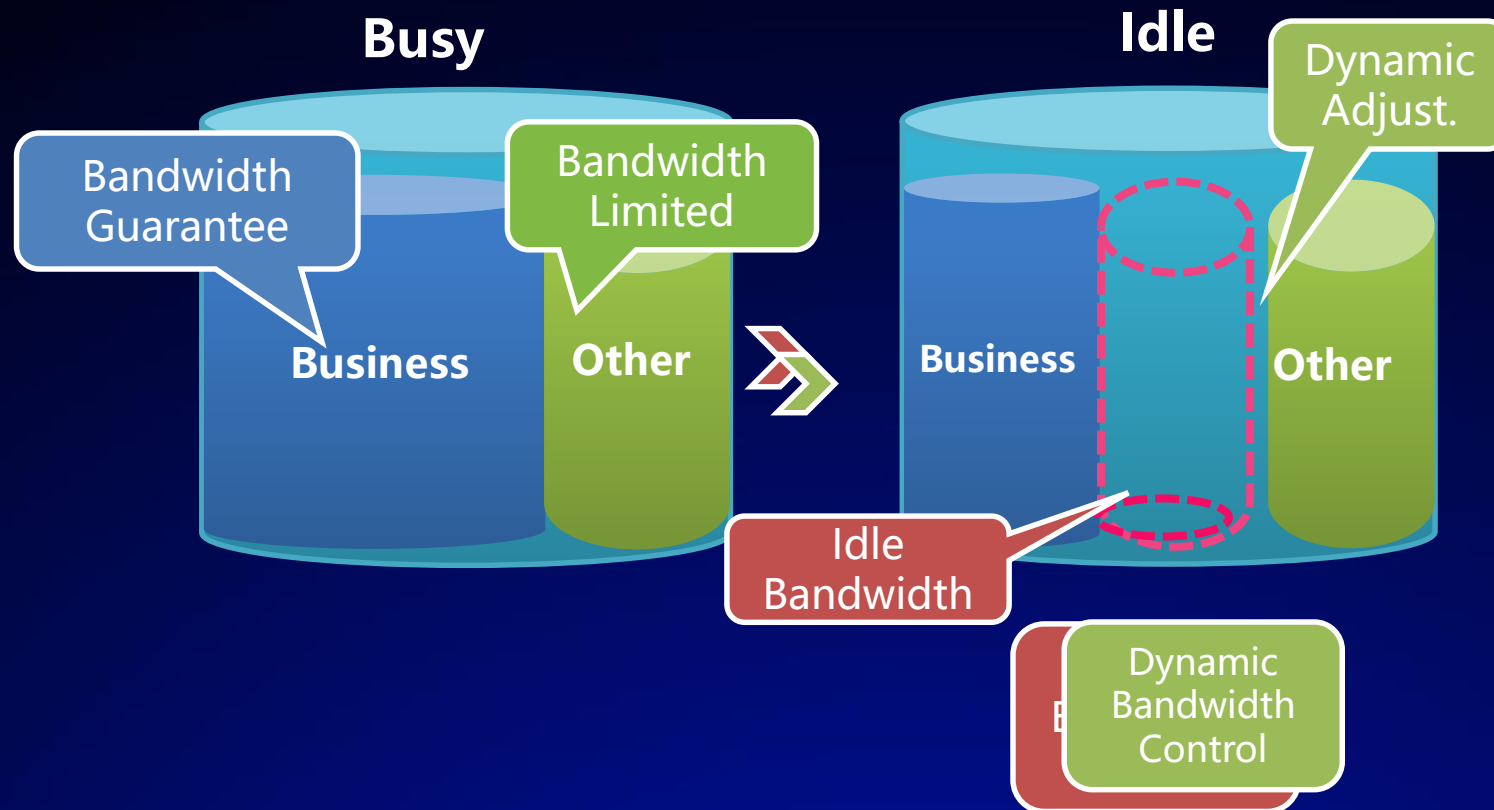


Granularly Control the traffic of applications such as YouTube, Dropbox, etc. to guarantee the experience of core business system applications !

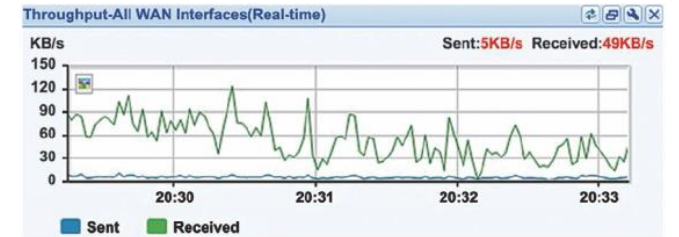
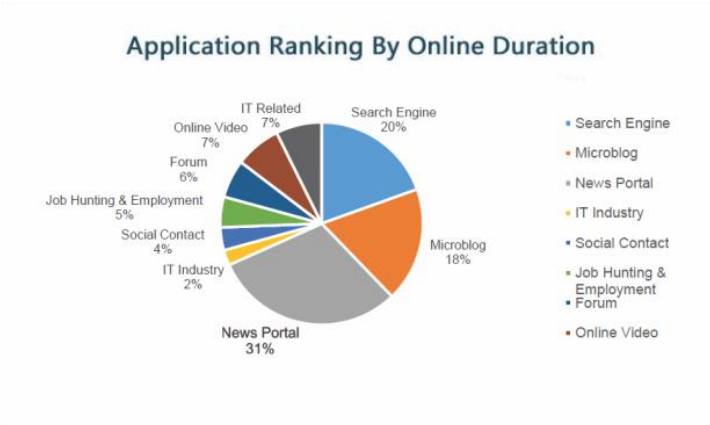
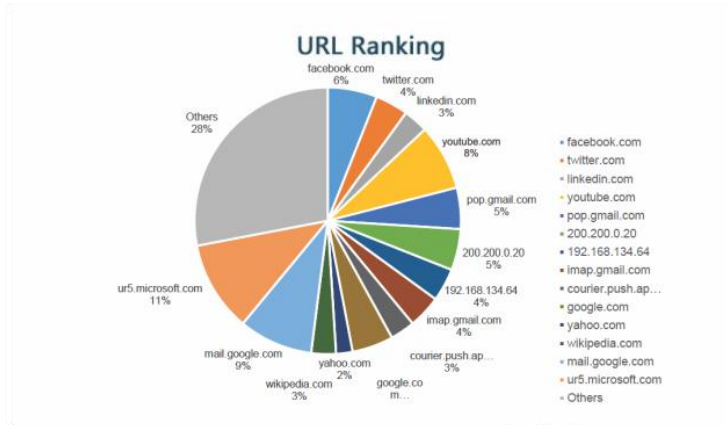


# Dynamic Bandwidth Management

The bandwidth policies can be adjusted automatically. When the bandwidth utilization is in the low level, the policy of bandwidth limitation will be disabled !

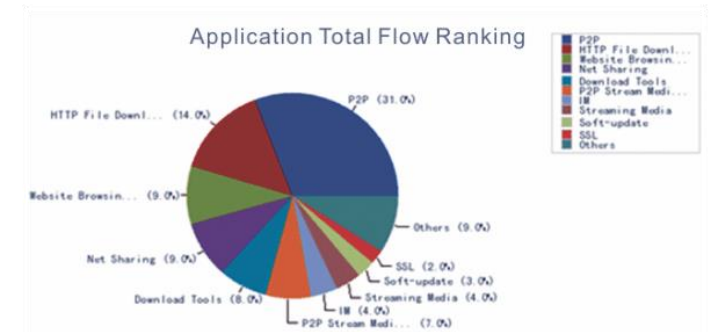
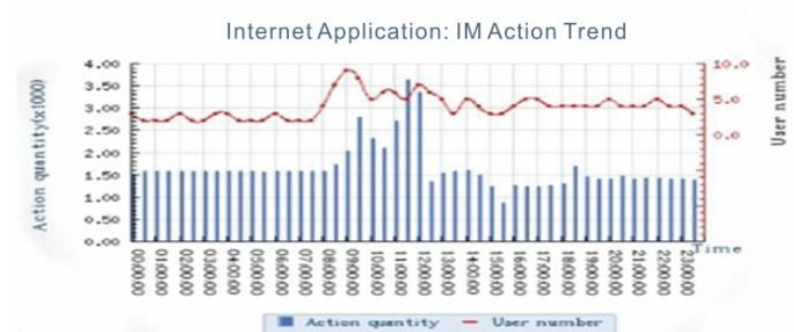
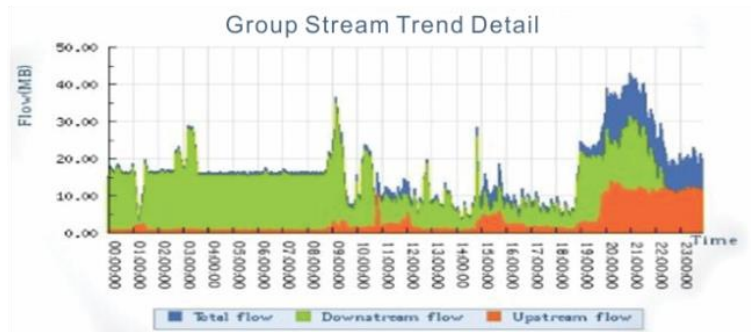


# Visibility of your Network



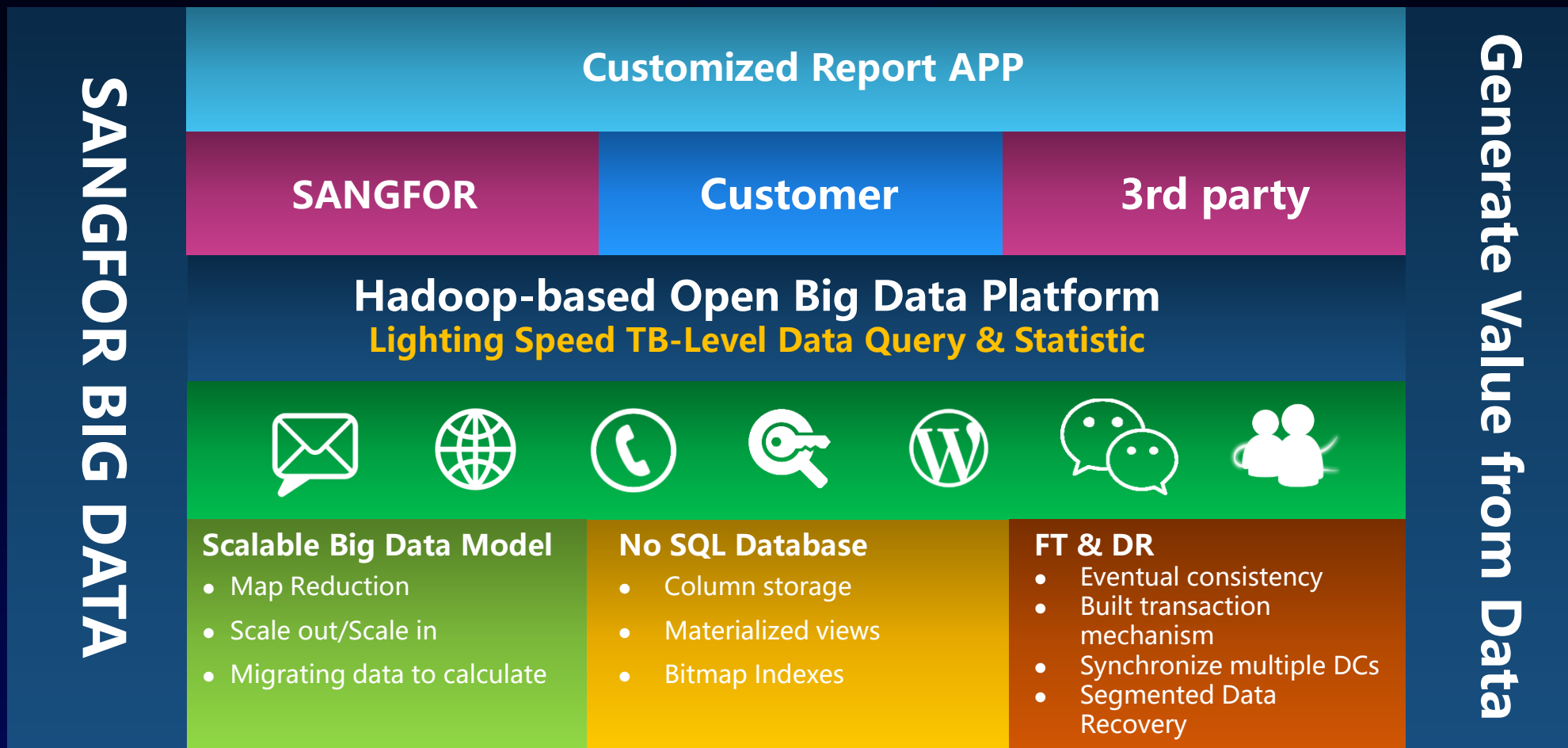
### Application Flow Ranking

No.	App Type	Uplink	Downlink	Percent
1	Website Browsing	42.45(Kb/s)	659.66(Kb/s)	75.9%
2	ICMP Protocol	11.27(Kb/s)	848(b/s)	20.1%
3	Skype	1.33(Kb/s)	9.08(Kb/s)	2.4%
4	Skype Receive File	480(b/s)	488(b/s)	0.8%
5	NetworkNeighbors	432(b/s)	0(b/s)	0.8%



# Increase the Value of Data

- SANGFOR FREE Big Data Analysis Platform



# Increase the Value of Data

## - Case Studies



### Educational Grants Assessment Report

By analyzing the students' mobile terminals, the type of websites visited and the length of game time, it can assist in evaluating the assessment of poverty of students.

### Anonymous Testimonial Director of Information Center from a renowned university

Grants Assessment Report solved the problem of assessment to ensure that the grants we provide really help those poor students with excellent academic records who really need help.



### Anonymous Testimonial Head of IT from a renowned phone manufacturer

In the mobile phone industry, finding talent is rare and resignation risk reports can help companies to discover turnover intention, and help keep key employees. This also allow the IT department to create more value for the company.

### Resignation Risk Report

By analyzing the employees' behavior, such as accessing job websites, sent out resumes, job searching, and other related online behaviors, it can assist to warn the HR dept. to take the necessary measures to take actions and retain key employees.

# Application of Big Data Analytics for Different Industries

Smart  
Healthcare



Homeland  
Security



Multi-Channel  
Sales



Telecom



Traffic Control



Manufacturing



Trading  
Analytics



Search  
Quality



## Conclusion

More Sophisticated Access Control is needed for New Business Environment !

- Visibility of **Users, Behaviors and Endpoints** is the basis of Network Management.
- **Comprehensive and Granular Control** of the Applications, their Contents, and the Traffic will enhance the User Experience & Increase Work Productivity.
- **Big Data Mining** of User Behaviors will generate more Value for Organizations.

# Thank you !

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