Designing STAR: A Cyber Dashboard Prototype

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Problem: Communication of Cyber Information

- **Why?**
  - Technical jargon
  - Lack (or bloat) of tools
  - Manual work to convey information
  - Quantity and time-scale of data
  - Impact and effects on daily operations

Personas

CEO (decision-making)

Goals	Coordinate personnel and operations	
Knowledge	Operations ●●●●●	Cyber ●○○○○
Cyber SA	Attention ●○○○○	Temporal Window ◄——►
Key Questions	• How can we maintain ongoing operations? • What could happen if a critical system is impacted? • What are the most critical systems at risk of attack? • What cyber resources will be needed in the future?	

Decisions

Director of IT (decision-making)

Goals	Maintain cyber situational awareness	
Knowledge	Operations ●●●○○	Cyber ●●●○○
Cyber SA	Attention ●●○○○	Temporal Window ◄——►
Key Questions	• Does this attack matter? • How serious is the attack? • What do I do about the attack? • Are there any negative effects?	• What did the bad guys do/take? • Is it a good day on the network? • How is my network different from last week?

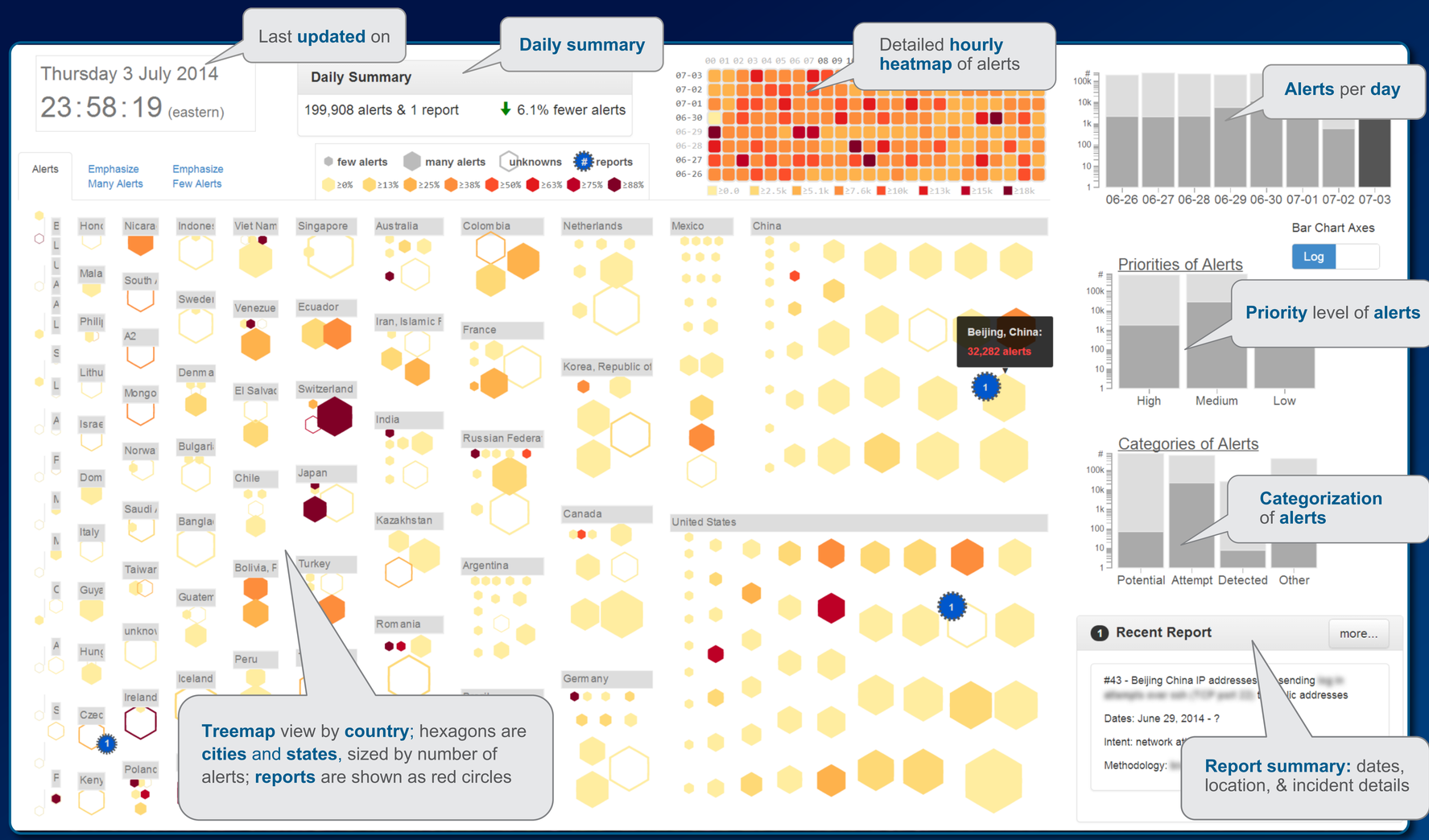
NOC Manager (information-synthesis)

Goals	Communicate impact on operations	
Knowledge	Operations ●○○○○	Cyber ●○○○○
Cyber SA	Attention ●●●○○	Temporal Window ◄——►
Key Questions	• Does this attack matter? • How serious is the attack? • What do I do about the attack? • Are there any negative effects?	• How successful was the attack? • What did the bad guys do? • What did the bad guys take?

Information

Cyber Analyst (information-gathering)

Goals	Identify anomalous network behavior	
Knowledge	Operations ●○○○○	Cyber ●●●●●
Cyber SA	Attention ●●●●○	Temporal Window ◄——►
Key Questions	• What does my network look like? • What happened on the network • last night? What's different? • Is something bad happening?	• How was my network attacked? • Who is attacking my network? • Does this attack matter? • What did the bad guys do?



Scenarios

Scenarios aided us to build our prototype for crafting stories

- Status: daily status of operations
  - "Green" status: non-critical updates; scheduled maintenance
  - "Red" status: critical vulnerabilities; hardware/software failures
- Event: report of an attacker that downloaded information
- Trend: detecting correlated events from other reports or alerts

Sources of Data

DATA	*SOURCE*
Geolocation	MaxMind Database (IPs)
Reports	IT Security Analyst
Alerts	External Network – IDS system

External Traffic from **Around the Globe**

Detailed Information on **Two Recent Incidents**

Millions of Alerts

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