

2013 Synchrophasor Data Survey Results Sponsored by the EPRI IntelliGrid Program

Information & Communication Technology (ICT) for Transmission (161B)

Matt Wakefield, Director ICT

(on behalf of Paul Myrda)

NASPI

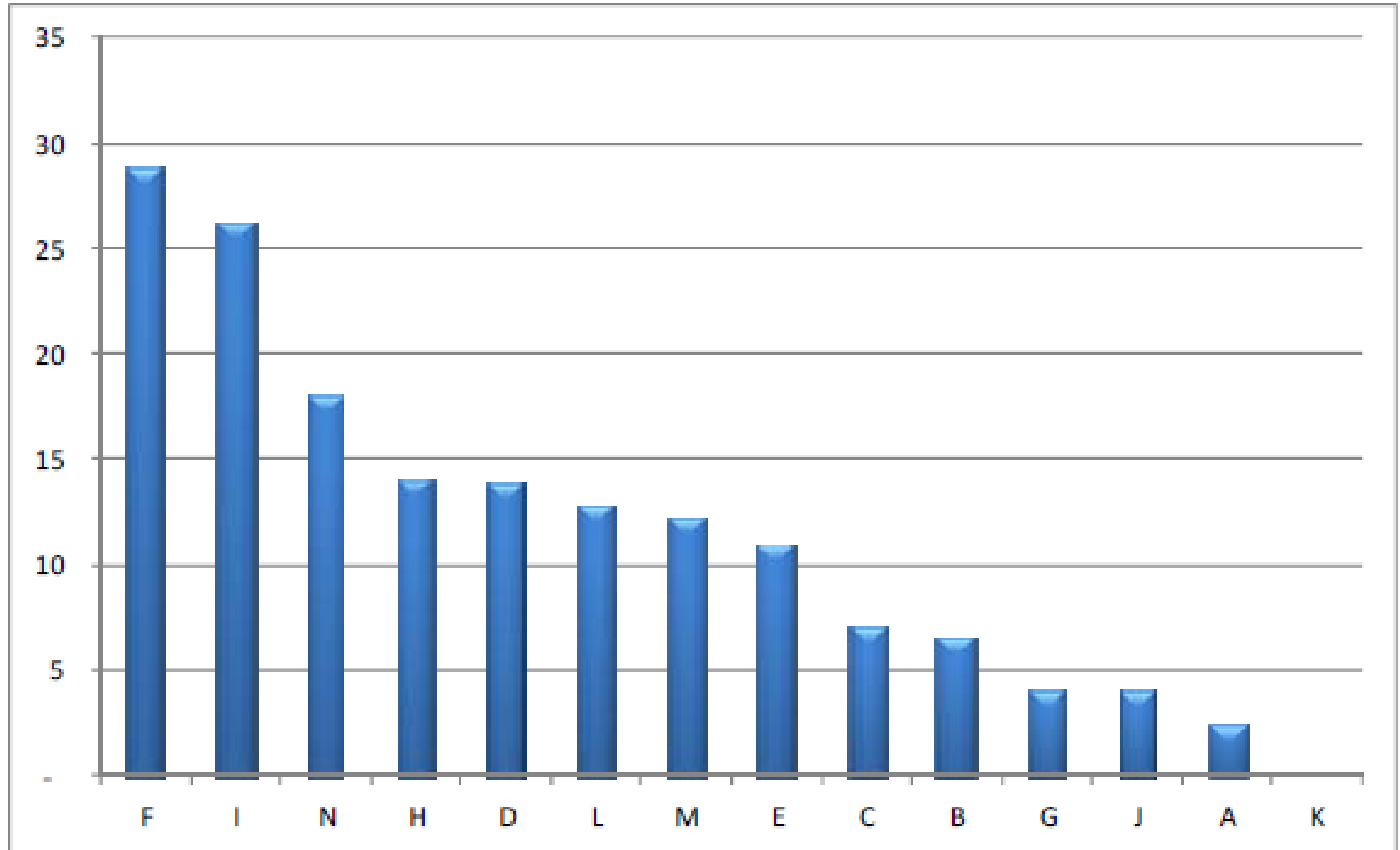
March 12, 2013

Survey Background

- **13 Companies mostly USA but 1 international**
- **Data gathered in the fall of 2013**
- **Topic Areas Surveyed**
 - What is being Monitored
 - Data Storage & Retention
 - Applications & Users

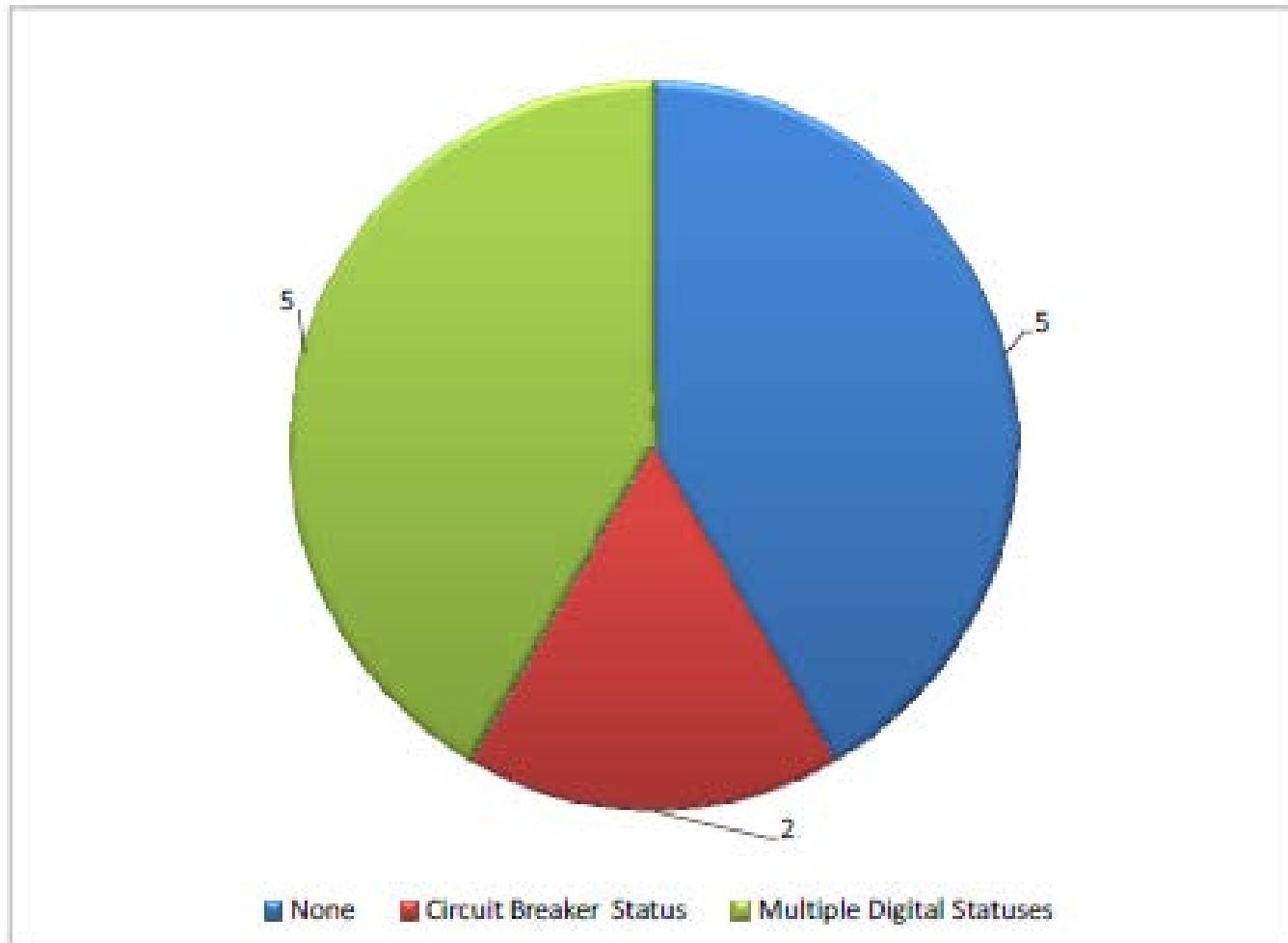
Monitoring – Number of Signals Measured

(i.e. B-Phase voltage or Phase current)



Average = 12

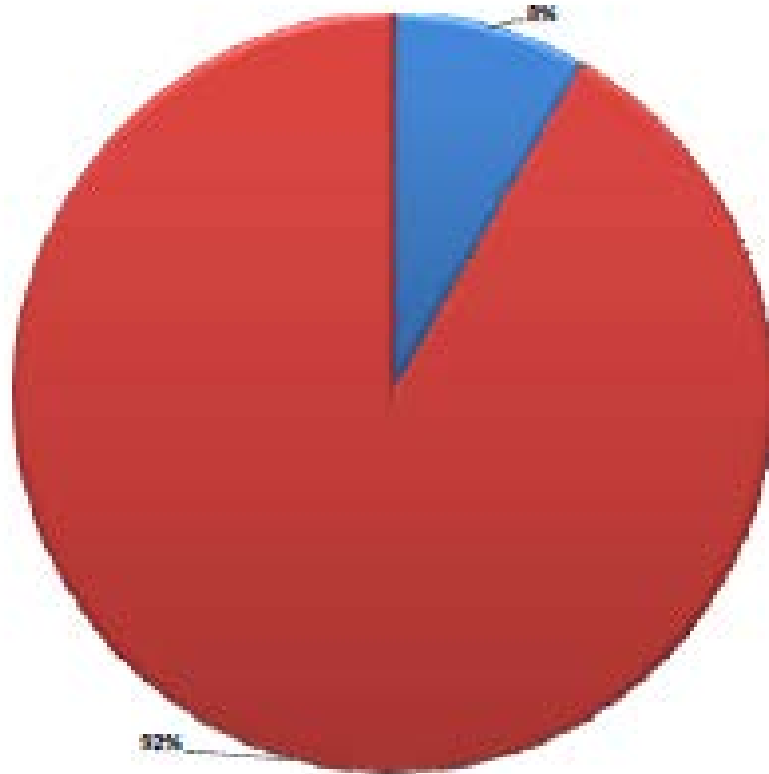
Monitoring - Digital Status Points



5 companies do not use digital status points

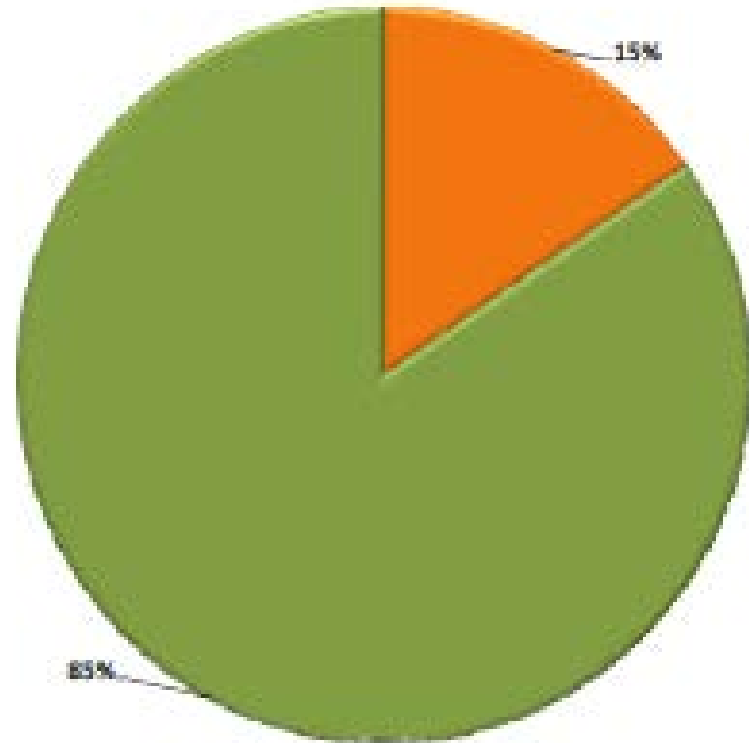
Monitoring - Phases Monitored

Voltage



■ 1 - Phase ■ 3 - Phases

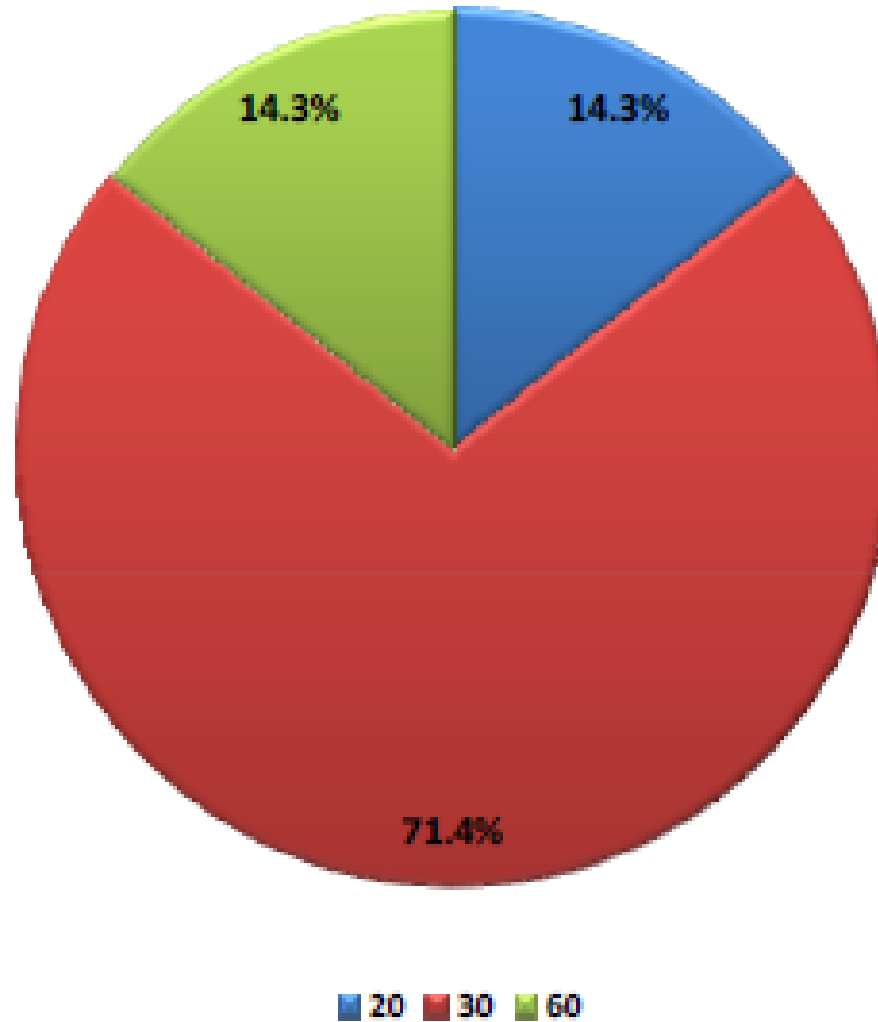
Current



■ 1 - Phase ■ 3 - Phases

Most companies measure all 3 phases

Monitoring - Sample Rate

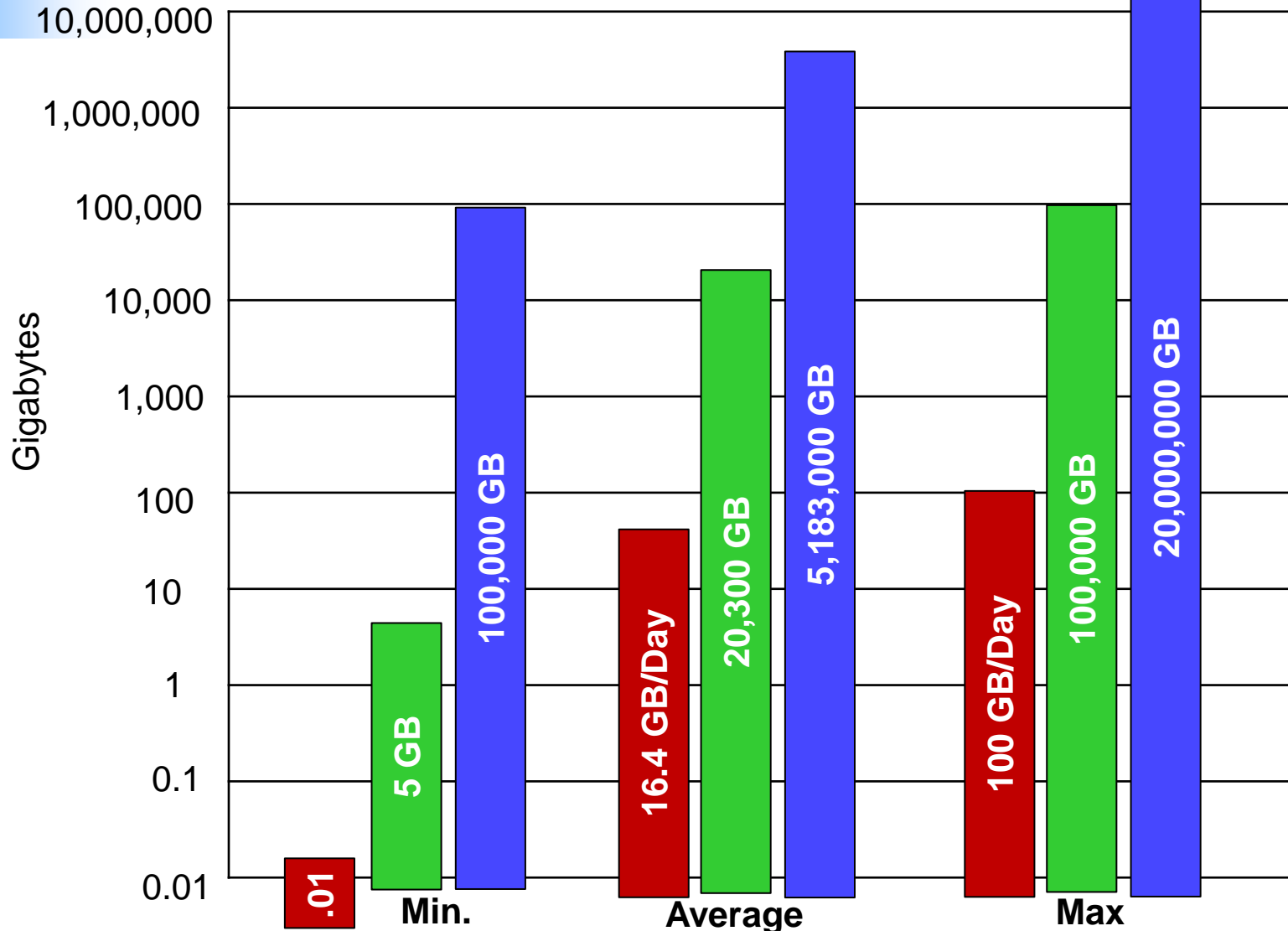


Majority use 30 samples per second

Conclusion - Monitoring

- What is Consistent?
 - Number of Phases Monitored
 - Sampling Rate and Signals
- What is Noticeably Different?
 - Digital Status Points
 - About 50% of companies capitalize on the precise time stamp associated with PMU based digital status.

Data Storage



Daily Storage GB/Day

Data Currently Stored Online

Data Stored Offline (Archived)

Conclusion – Data Storage & Retention

- Daily storage volumes varied widely
 - due to the wide variety of signals monitored and the number of PMUs at each company.
- Archiving and retention policies varied but tended to be about a 3 years
- Data destruction also varied with most respondents indicating no destruction or others at 3 years

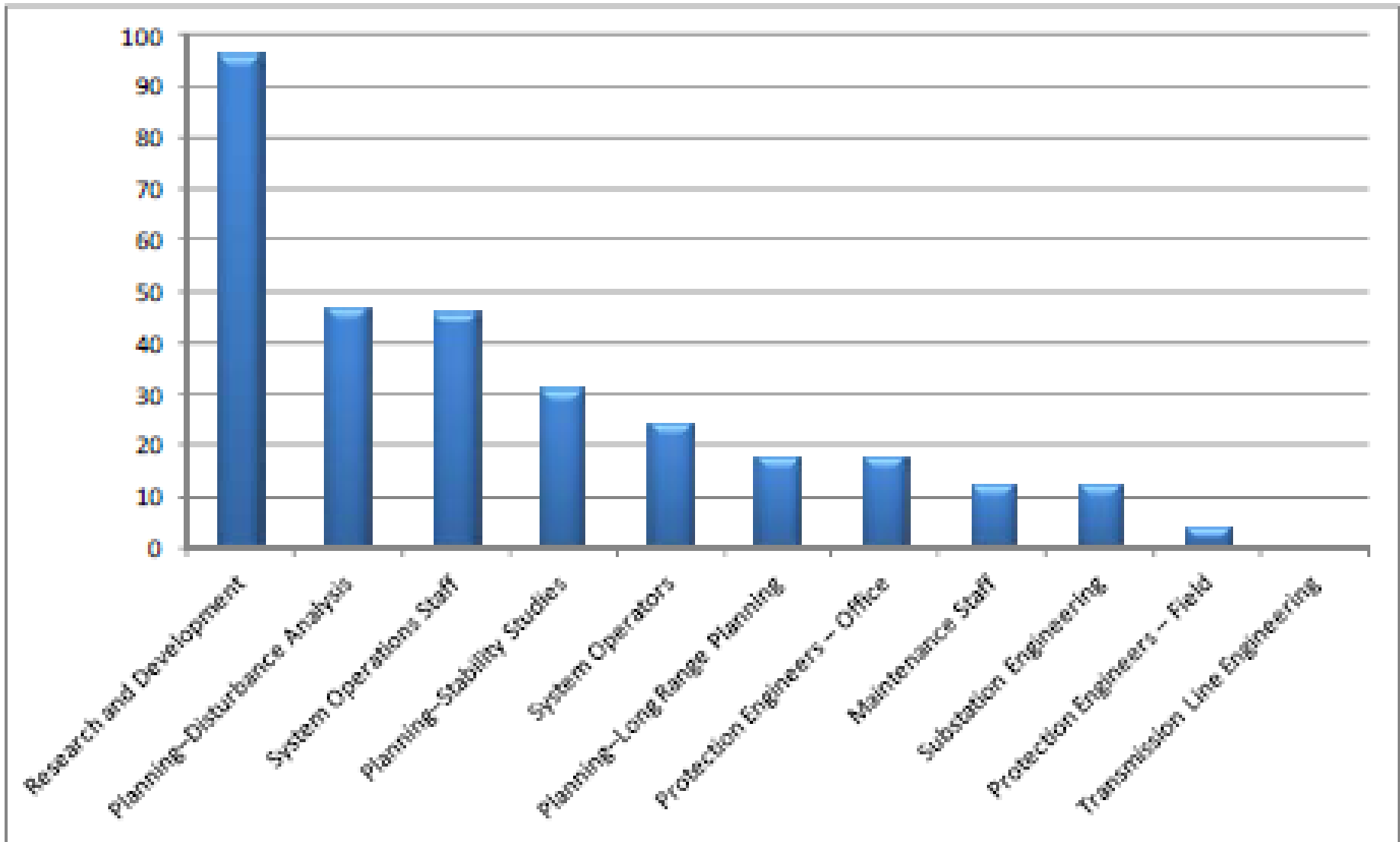
Conclusion – Storage Cost

- Annual amount of disc space needed to store all the currently installed synchrophasor data is about 4,815 TB / Year.
- Using typical hosting service prices the annual cost for storing that amount of data is approximately \$7.9 million USD (but dropping).
- Migration to higher sample rates (from 30 to 60) would drive the cost higher

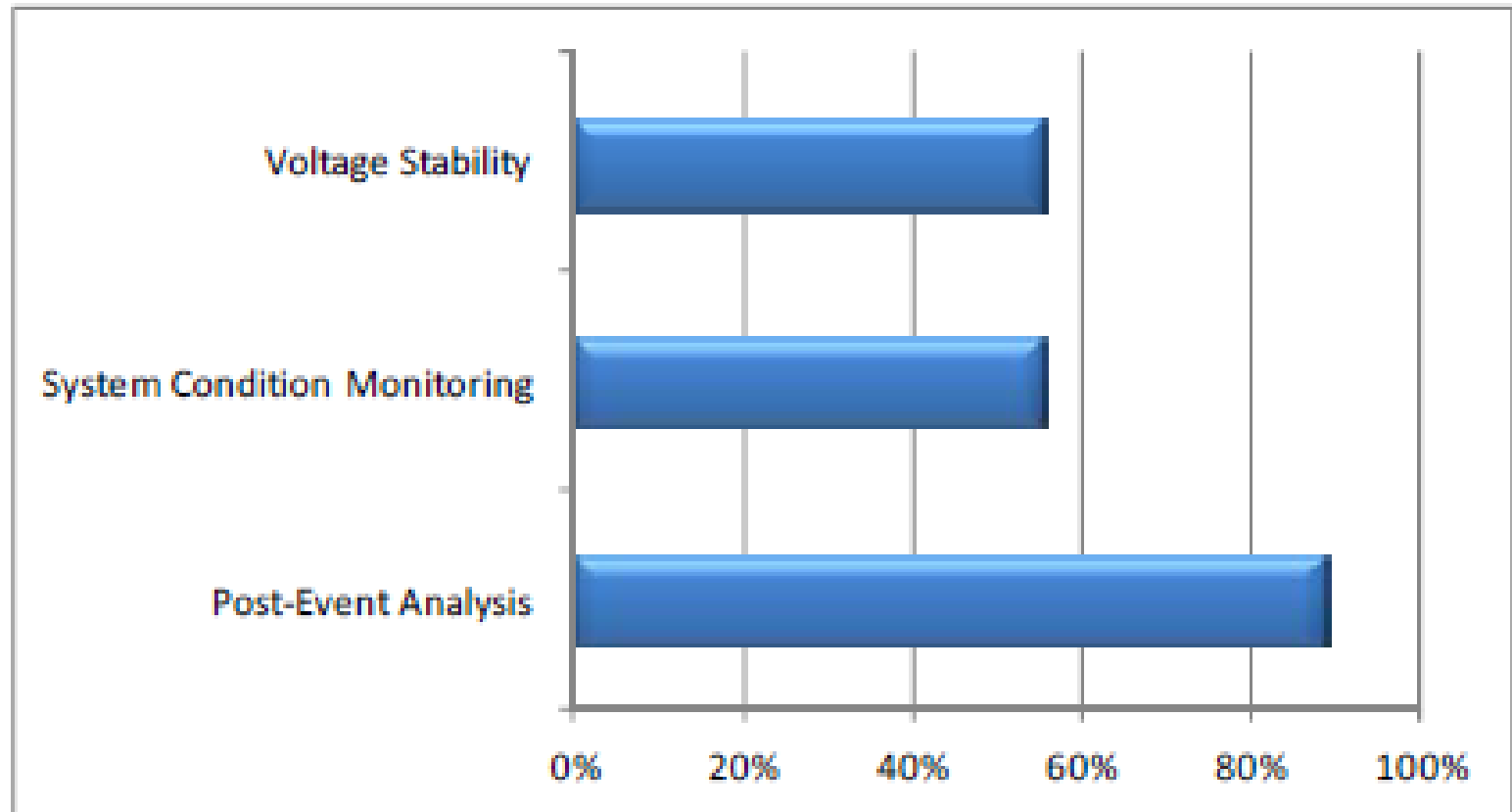
Data Storage is Expensive

The “Cloud” is becoming an increasing Important Option to Consider

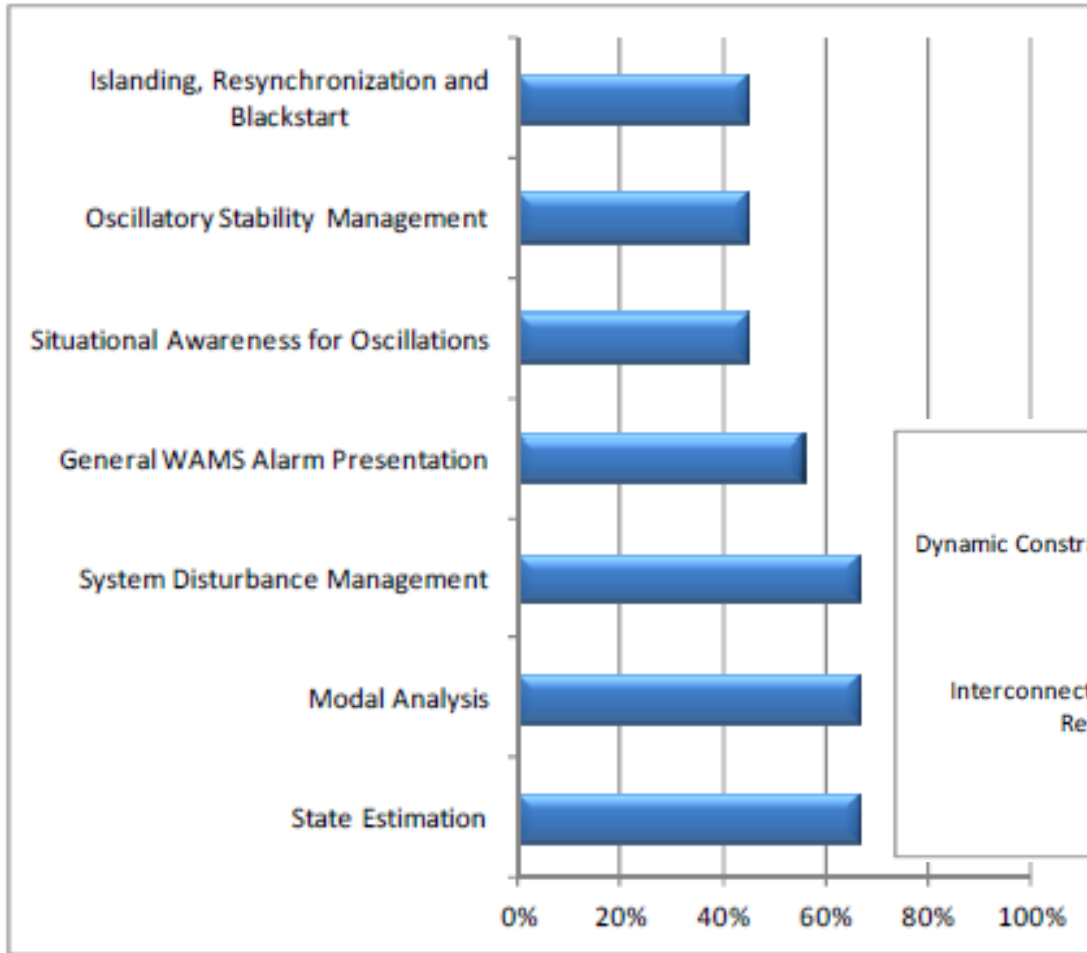
Who is using the data?



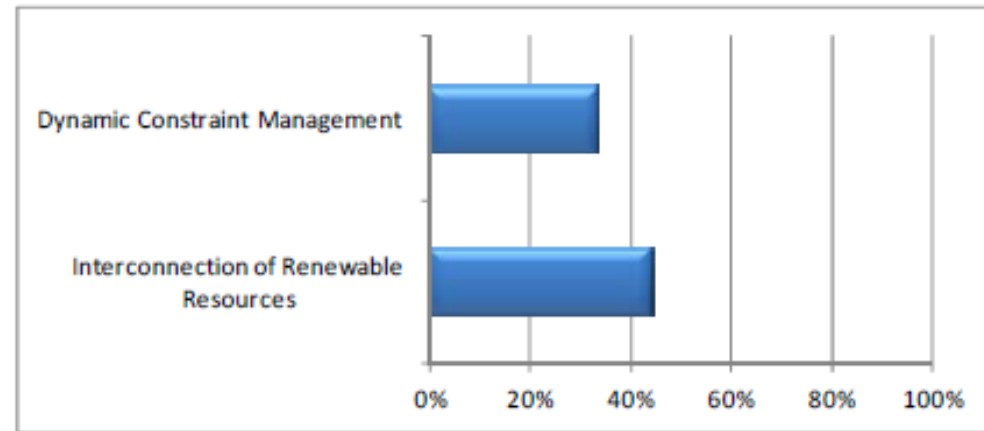
Applications Usage – Currently Use



Applications Expected to be used in the Future



Applications in 1-3 Years



Applications 4-7 Years

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