

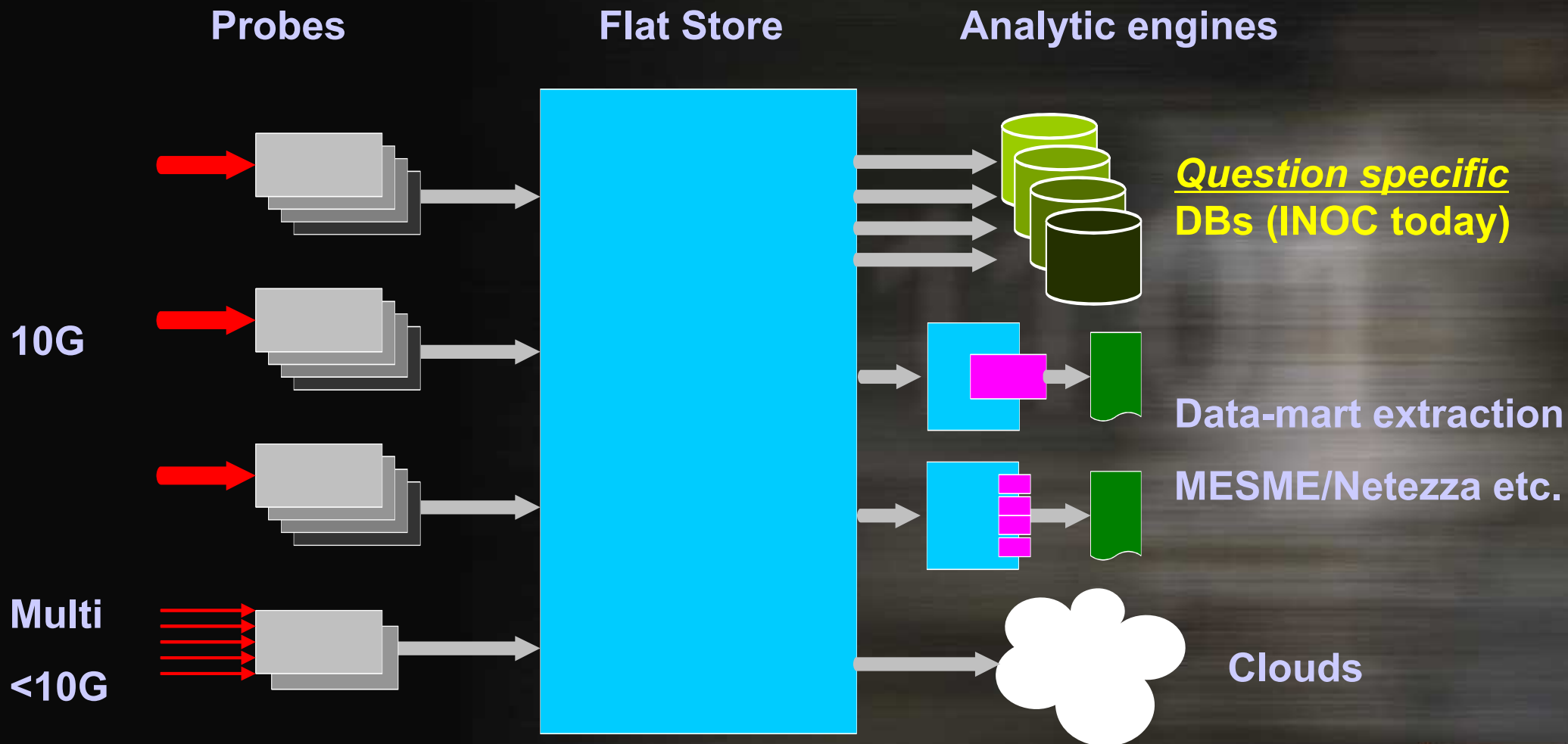
APPLIED RESEARCH

QFDs and BLACHOLE Technology behind GCHQ/INOC

March 2009



'BLACK HOLE'

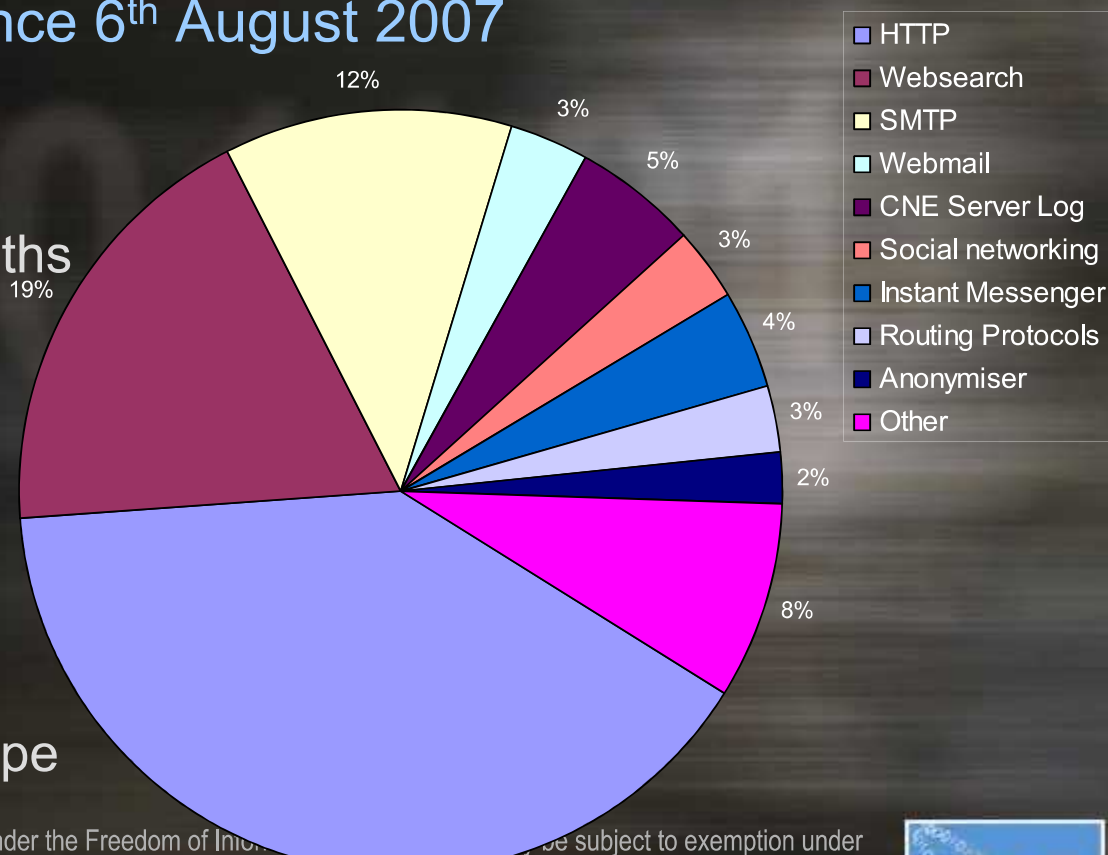


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BLACK HOLE

- Flat data store – not a database
- ~ 1,100,000,000,000 events since 6th August 2007
 - 53.3TB compressed
 - 217TB uncompressed
 - 47% of data is from last 3 months
- ~10 Billion events per day
- Cheap system:
 - £1k per TB of storage
 - £20k per 10Gbps probe
 - ~£400k for 10x10Gbps prototype



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Questions – INOC Today

Who, Where, When, What? – Online presence (TDI)



MUTANT BROTH

Who, which website(s)? – Online browsing activity



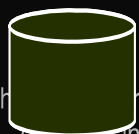
KARMA POLICE

Who, which fora? – Bulletin board usage



INFINITE MONKEYS

Where? – Google maps/earth usage



MARBLED GECKO

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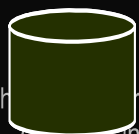
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MARBLED GECKO

... And many more

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Questions – INOC Today

Too many specific questions... Too much for analysts to learn.

Need analyst systems to be **simple** and **intuitive**.



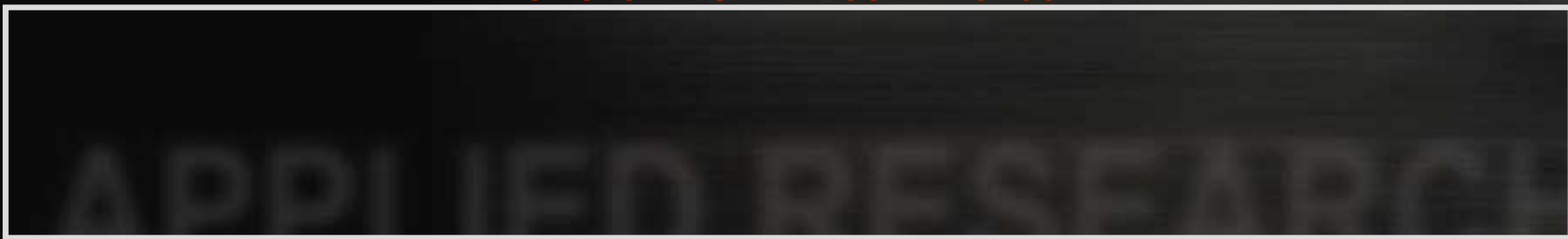
Let analysts find & simply understand their targets easily...

drill in to systems only when they need to

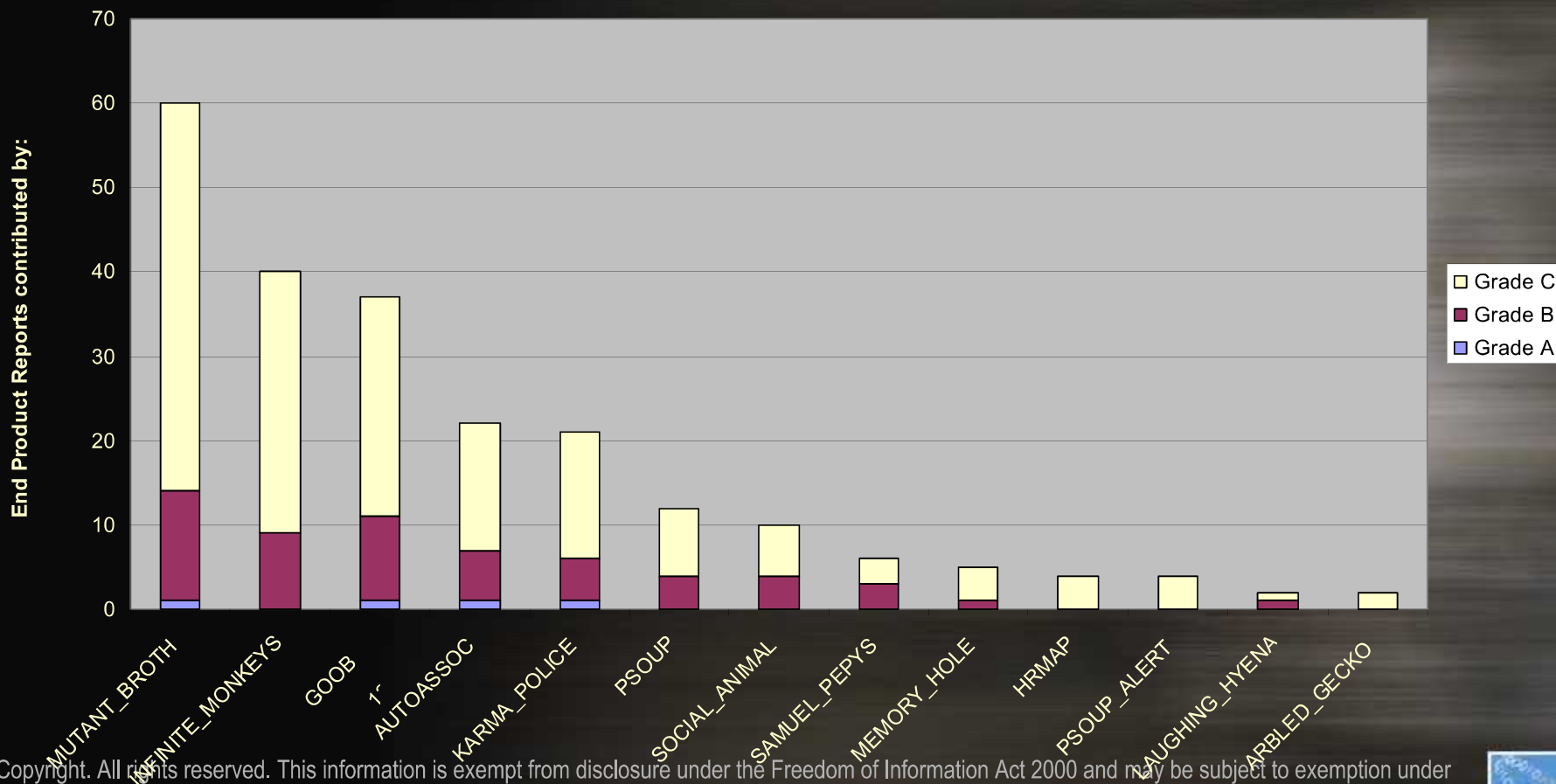
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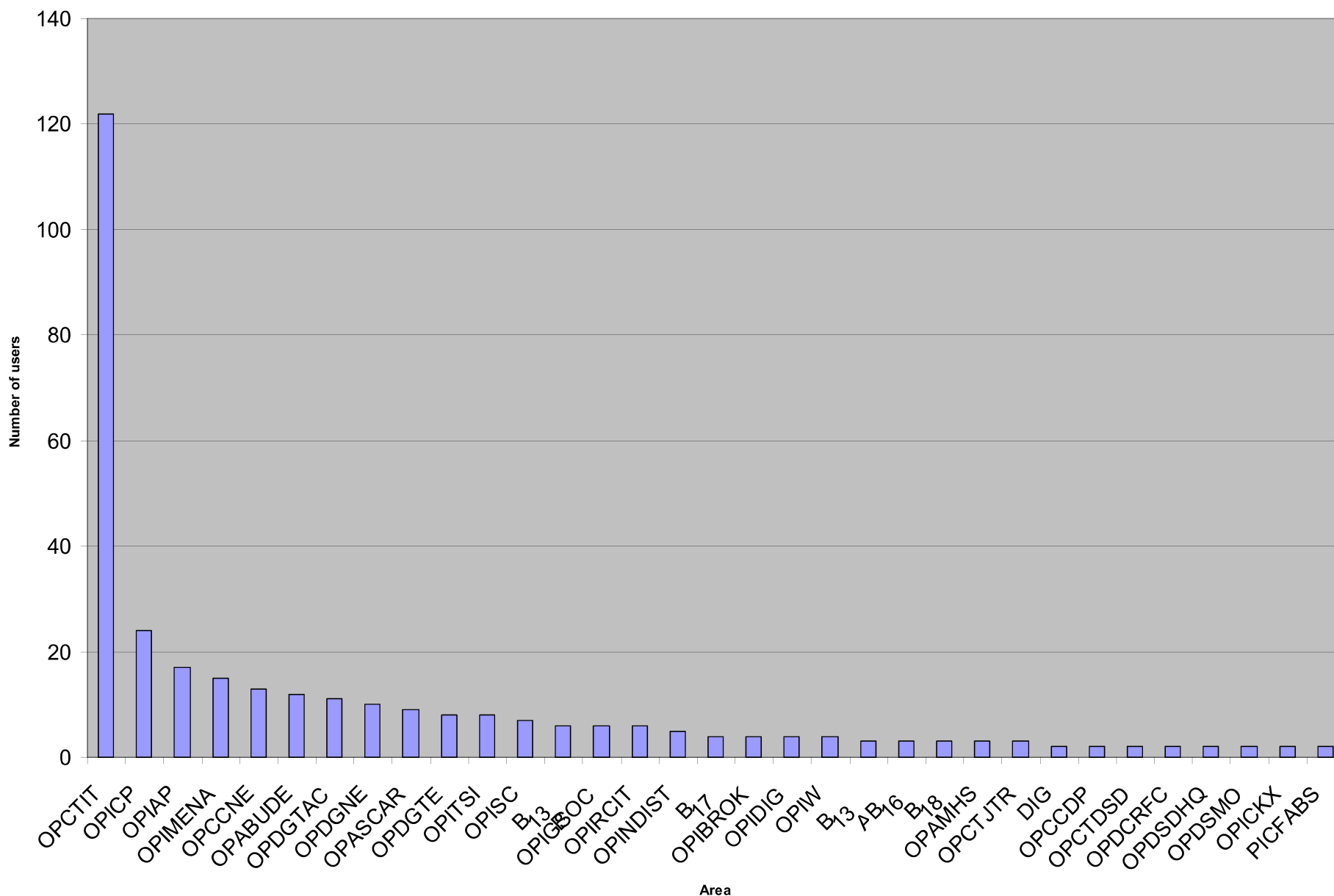
AR Prototypes - EPR Stats - Feb 2008 - Jan 2009



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Number of users who executed > 10 queries, by area



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