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The journey to high availability with open source components.

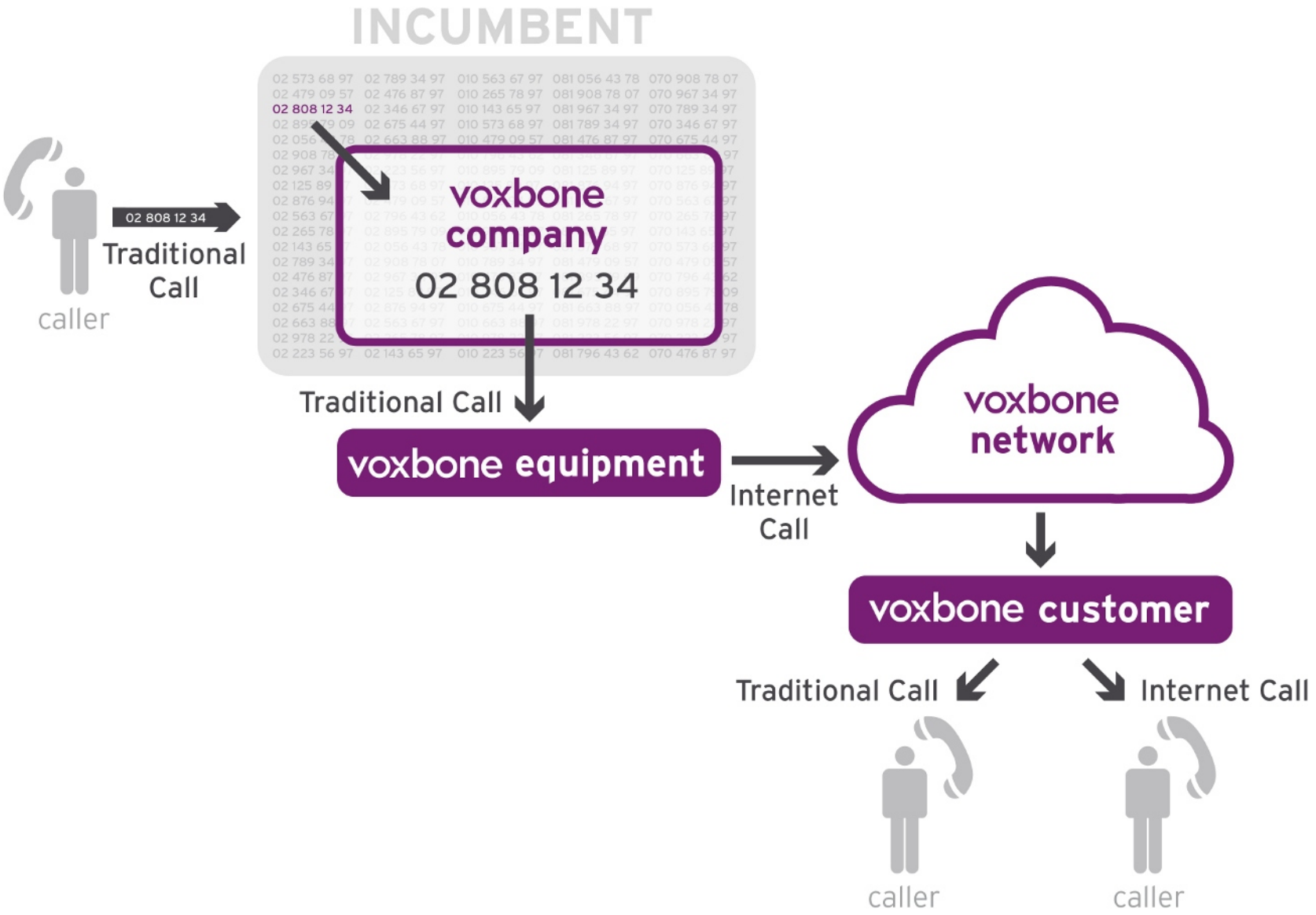
Synopsis

- Market leading DID provider
- Needs 99.999% availability
- Design must be scalable
- We like to automate …
- Open source route is the best we found

Company profile

- DIDs – telephone numbers
- CLEC in a growing number of countries
- Largest redundant inbound VoIP network
- Flexible in meeting customer requests
- Rapidly expanding

Company profile



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Company profile

Numbers in 50 countries across 4000 cities

Private, global IP backbone

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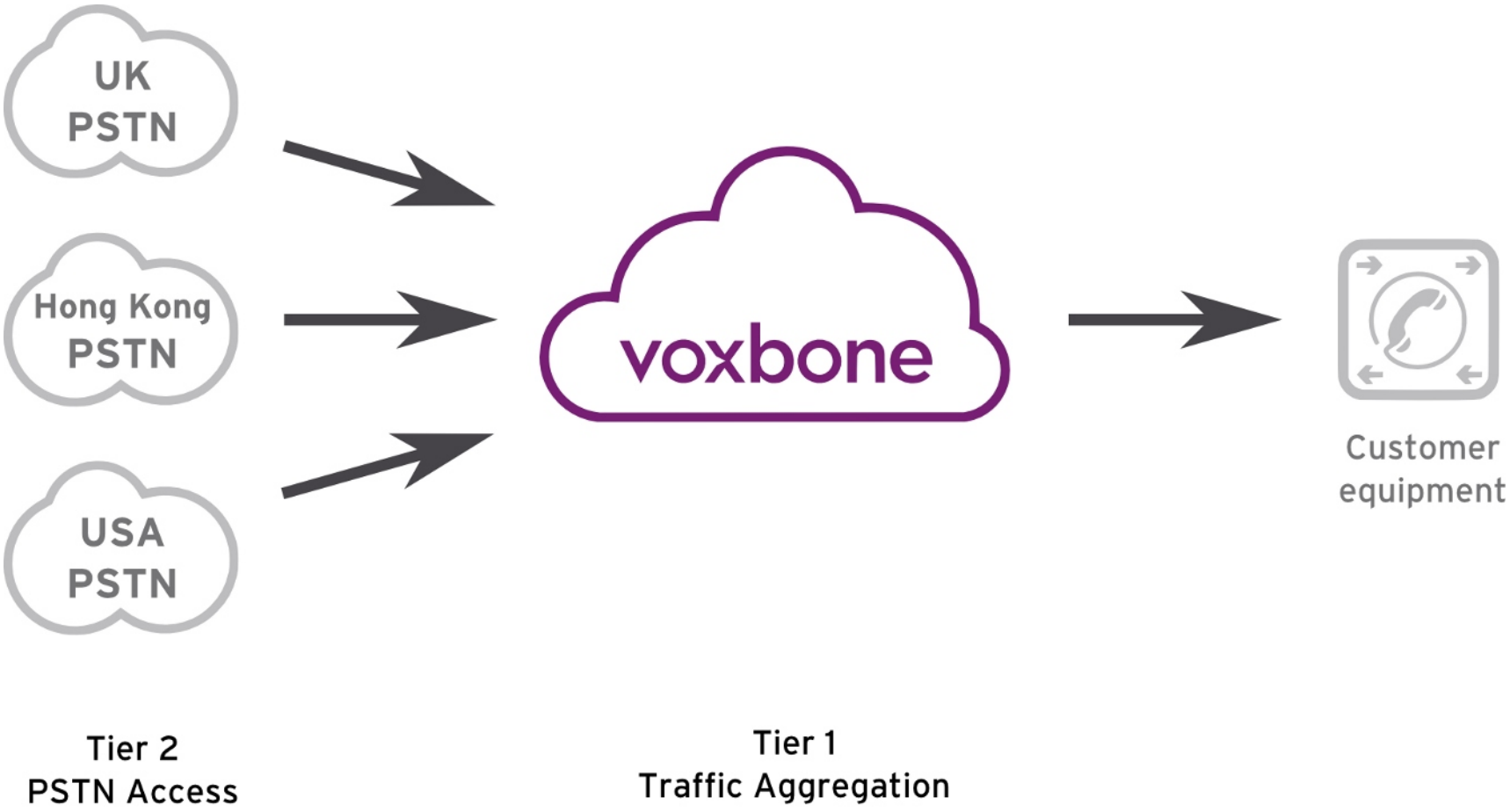
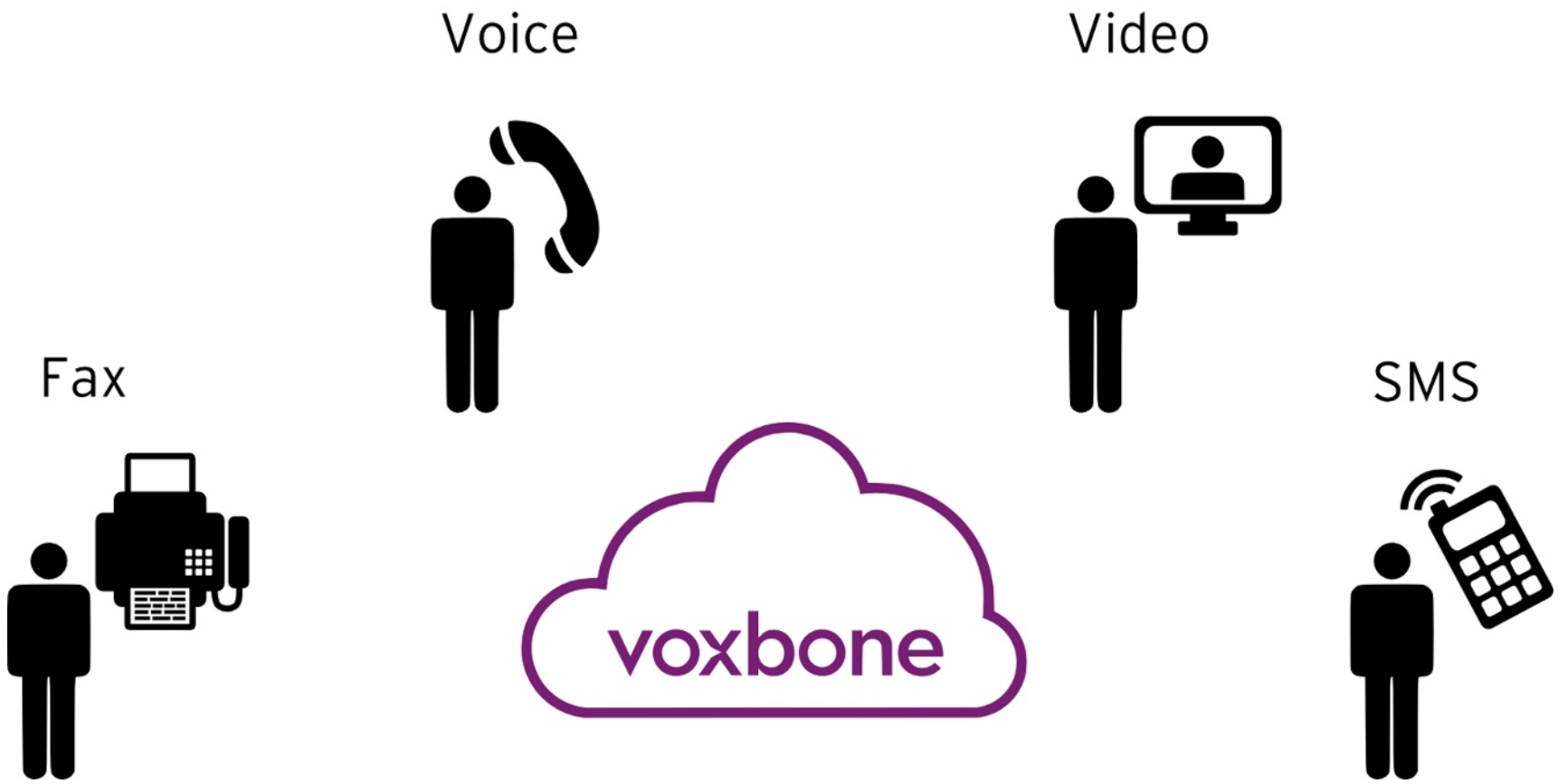
Company profile



Company profile



Multi-service network

Real-time provisioning using web-services

Network overview

- Simple, distributed layout
- Mixed in-house / open source infrastructure
- Geo-redundant, 99.999% uptime
- Redundant mesh of private IP links
- OpenSER, MySQL, Heartbeat
- Lots of Java and JAIN-SIP
- Many other systems …

Core challenges

Team focus

Process automation

Network visibility

Geographical redundancy

System modularity

Making it scalable

- OpenSER clusters connect services together
- Build a lab
- IP Anycast
- Keep things simple

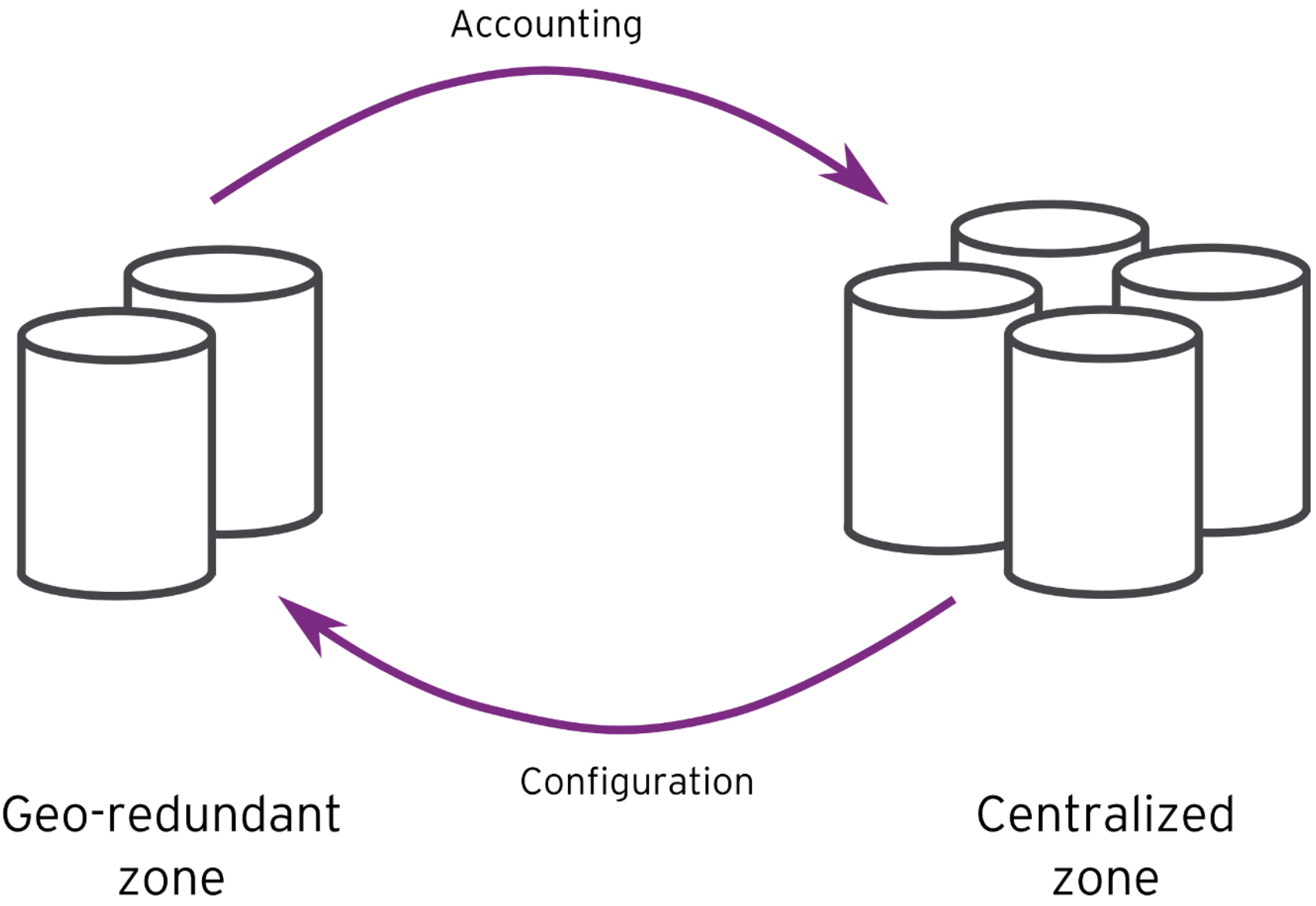
Choosing the right toolset

- Java
- JMX
- Perl and Groovy
- Continually evaluate new technologies

Geographical redundancy

- Distributed event propagation
- Provide a centralized entry point
- Keep call state local
- Replicate configuration data everywhere

Geographical redundancy



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Ubiquitous monitoring

- Single-point, single-service monitoring
- End-to-end realtime call flow validation
- Heartbeat clusters
- Cacti and Munin for graphing
- SMS alerting to engineering teams
- Automated failover

Tips for success

- Avoid single point failures through preemptive design
- Prepare for data partitioning in initial design
- Design for change and reuse of solutions
- Provide lots of opportunity for discussion throughout the design process

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