



# Registry Services Overview

APTLD Meeting  
Kuala Lumpur, Malaysia  
24, May 2008



- **Neutral clearinghouse services to global ISPs and the North American communications industry**
- **Administrator of Number Portability databases in US, Canada, Taiwan and Brazil**
- **Number Administration**
  - **Country Code 1**
  - **ETNS**
- **Registry Services**
  - **gTLD - .biz, .travel, .tel**
  - **ccTLD - .US,**
  - **Registry Gateway .cn, .tw**
  - **US Common Short Codes Registry**
- **Advanced Services**
  - **DNS infrastructure**
  - **ENUM**
  - **Identity/content management**
  - **Instant Messaging and presence services**
- **Global and regional industry participation for:**
  - **ITU, IETF, ICANN GSMA, ETSI, OASIS**



## Established Presence

- **Public company on NYSE (symbol: NSR)**
- **Headquarters in Sterling, Virginia USA**
- **Offices in USA, UK, Germany, Israel, Taiwan, Singapore, China, Hong Kong**
- **1,000+ employees**
- **Revenue for 2007 fiscal year totaled \$429.2 million (29% increase from \$333 million in 2006)**

## Broad Customer Base

- **Over 200 Registrars**
- **600 Telco Carriers in 40 countries**
- **Certified by FCC as a neutral third party**
- **Operates the XRI (OpenID/ i-name) global registry**

# Customer Profile & Selected Partners

- Government agencies and regulatory bodies
- ...
- Not-for-profit telecom and Internet organizations
- ...
- Internet domain registrars
- ...
- E-commerce, content and application providers
- ...
- Industry associations
- ...
- Telecom service providers (Wireline, wireless, cable & providers, service bureaus..)



# Experienced Registry Operator



*“NeuStar was judged to be the best overall registry operator for bidders’ experience, track record, and ability to deliver operational performance, technological excellence, policy compliance, product innovation, and marketing.” \**

**\*Judged by U.S. Department of Commerce 10/22/07**

*NeuStar serves thousands of enterprise, service provider, and TLD infrastructure customers worldwide.*

*NeuStar powers the resolution of over 30 million domain names across more than 20 Internet top-level domains (TLDs) including .biz, .us .org, .info, .mobi, .in, .ca, .uk, hk, etc.*

- ICANN accredited registry operator for .biz with over 2M domains managed
- Dept. of Commerce accredited registry operator for .us & .kids.us; managing over 1.4M domains with federal, state & local reserve names
- Provides back-end registry services for .travel, 4U.com and .Tel (launching 2008)



# Registry Activities Continued

- Operates international registry gateway for .CN and .TW
- Operates private root for GSMA (wireless data roaming)
- Provides DNS infrastructure and services to 1000+ corporate customers worldwide (Amazon, Oracle, American Express, and TLD's)



Approximately 30 million domains managed on NeuStar's DNS platform

# Registry Activities Continued



Primary or secondary DNS provider to following  
Top Level Domains

TLD Infrastructure Customers			
Global TLD	ccTL	ccTLD	ccTLD
.asia	<b>D</b> .as	.hn	.nz
.biz	.bi	.ie	.sc
.coop	.bz	.in	.ua
.info	.ca	.jp	.uk
.mobi	.cx	.lu	.us
.travel	.dm	.mh	.uz
.org	.fm	.mn	.vc
	.gi	.no	
	.hk	.nu	

- **Complete back end registry solutions (Thick registry, EPP, WHOIS, Billing, Reporting, 24X7X365 Help desk)**
- **Global registry gateways**
- **Proven primary and secondary DNS (Global network, DDoS protection)**



# International Domain Name Leader



- IDN registration for .BIZ expanded to 15 languages:

German  
Norwegian  
Danish  
Japanese  
Korean  
Polish  
Latvian  
Finnish

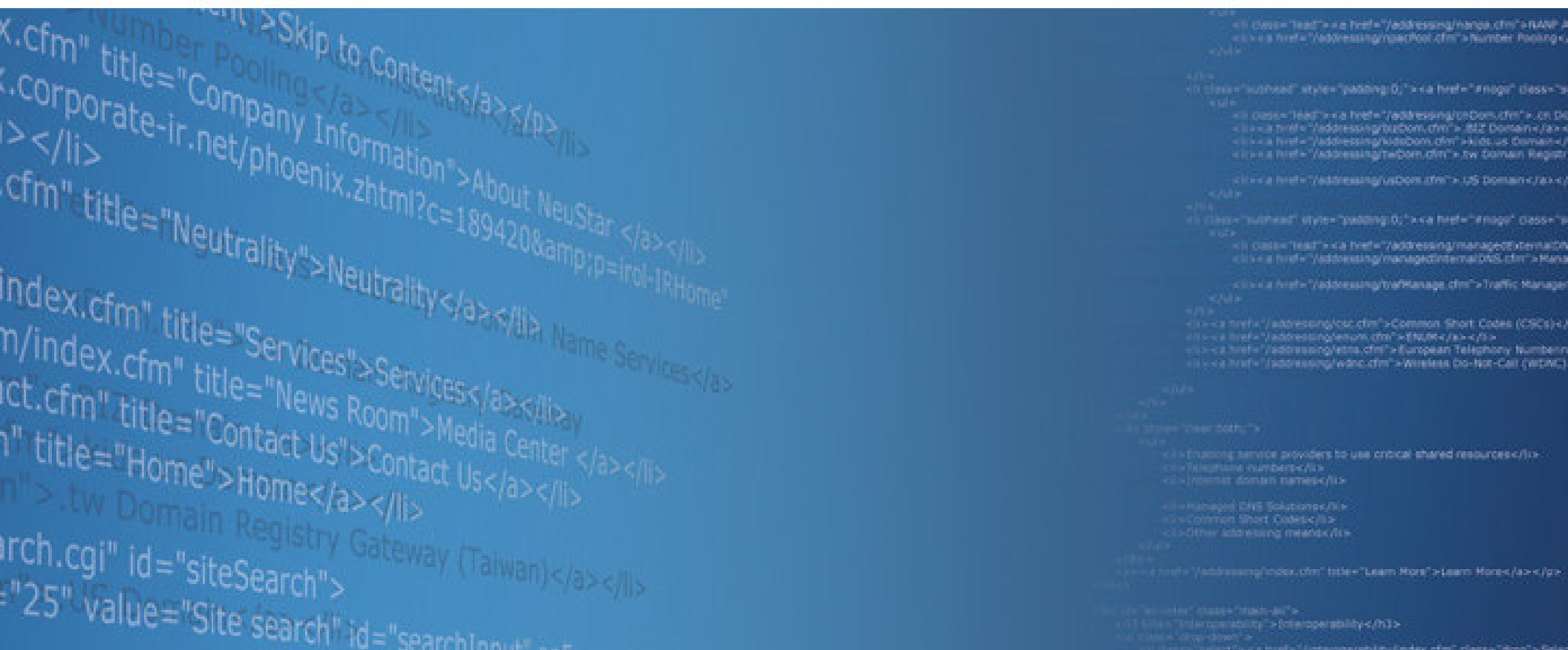
Swedish  
Icelandic  
Spanish  
Chinese  
Portuguese  
Lithuanian  
Hungarian



*Meeting the demands of  
the global marketplace*



# Issues to consider in order to operate a world class Registry



- **Domain Name**
- **Sponsoring Registrar**
- **Key Dates (registration, expiration, last update, etc.)**
- **Domain Statuses**
- **Name Servers**

- **Domain Name**
- **Sponsoring Registrar**
- **Key Dates (registration, expiration, last update, etc.)**
- **Domain Statuses**
- **Name Servers**
- **Registrant Contact Info**
- **Admin Contact Info**
- **Technical Contact Info**
- **Billing Contact Info**

# Benefits of Thick and Thin Registries



## Thin Registry Benefits:

- **Less data to manage at the Registry**
- **Less transaction load per domain name managed**
  - **No contact oriented transactions**

## Thick Registry Benefits:

- **Full insight into registrant data**
- **Allows for one centralized, authoritative database that includes all contact data**
- **Allows the Registry to enforce registrant-oriented policies**
- **Increases protection for registrants in the event of Registrar failure (Ex: RegisterFly)**

# Core Registry Components



## Shared Registry System (SRS)

- The core of the Registry
- Typically includes a centralized database, application and protocol servers, other components to enable and manage registrar connectivity (e.g. firewall, throttling, etc.)

## WHOIS Database

- Centralized contact database
- Available to the public
- Web and command-line interfaces

## DNS

- Constellation of resolution servers

## Shared Registry System (SRS)

- The core of the Registry
- Database
- Protocol (EPP) Servers
- Application Servers
- Connection throttling network hardware
- Protected by multiple firewall layers
- High-Availability (HA) design
- Replicated in backup datacenter

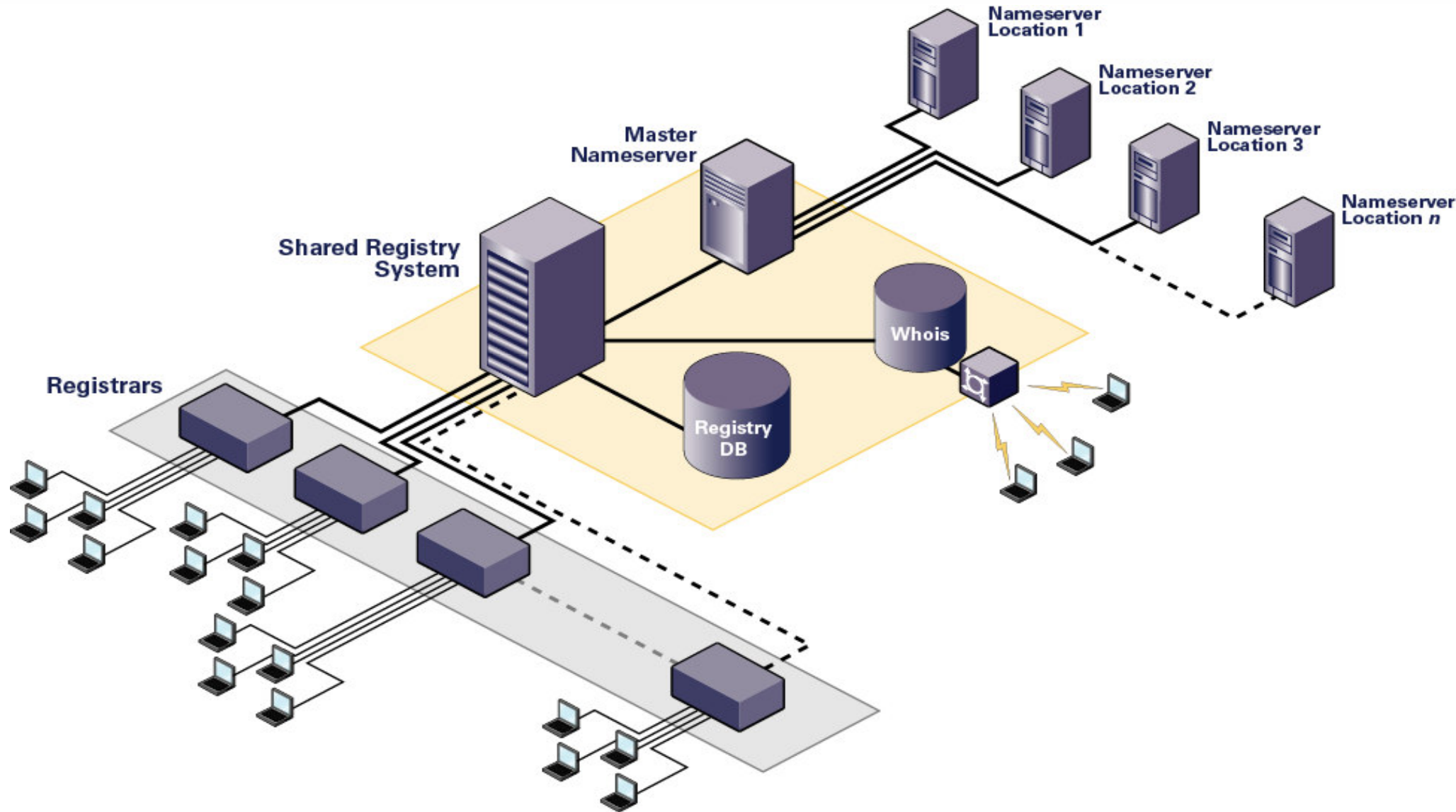
## WHOIS Database

- **Centralized Contact Database**
- **Web and Port 43 accessible**
- **Open to the public**
- **Updated dynamically, in near real-time**
- **Firewall Protected**
- **High-availability (HA) design**
- **Replicated in backup datacenter**

## DNS

- **Constellation of resolution servers**
- **Geographically dispersed, preferably across the globe**
- **Anycast, Unicast, both**
- **Diversified hardware and software**
- **Excess bandwidth capable of processing peak loads**

# Core Registry Architecture



# Secondary Components



## Customer Support

- **Primarily responsible for providing business and technical support to registrars**
- **May also respond to general public inquiries**
- **Conducts Registrar certification testing**
- **24x7 availability**

## Billing

- **Provides real-time billing of registry transactions**
- **Manages registrar debit accounts, or other methods of payment**
- **Provides monthly statements**
- **May need to take into account VAT and exchange rate issues**

# Secondary Components - Continued



## Reporting

- **Separate data warehouse**
- **Generates daily, weekly and monthly reports in various formats**
- **Provides data for internal analysis and external reporting**
- **24x7 availability**

## Data Backup and Escrow Systems

- **Provides critical data back up systems**
- **Ensures the Registry can recover in the event of a catastrophic failure**
- **Provides daily and weekly data escrow deposits**

## Network Operations Center (NOC)

- Provides constant monitoring of all systems
- Fully staffed 24x7
- Provides immediate response to technical issues
- Manages escalation process

## Network Monitoring System (NMS)

- Critical systems designed to detect system issues
- Monitors all systems for availability, response times, CPU usage, memory usage, etc.
- Provides automated alerting to the NOC
- Critical for early warning detection of issues

# Functional Roles



## Back Office

Database Administration

Software Engineering

Reporting

System Administration

QA Testing

Billing

Information Security

Network Ops Center

Product Development

Network Administration

Customer Support

## Front Office

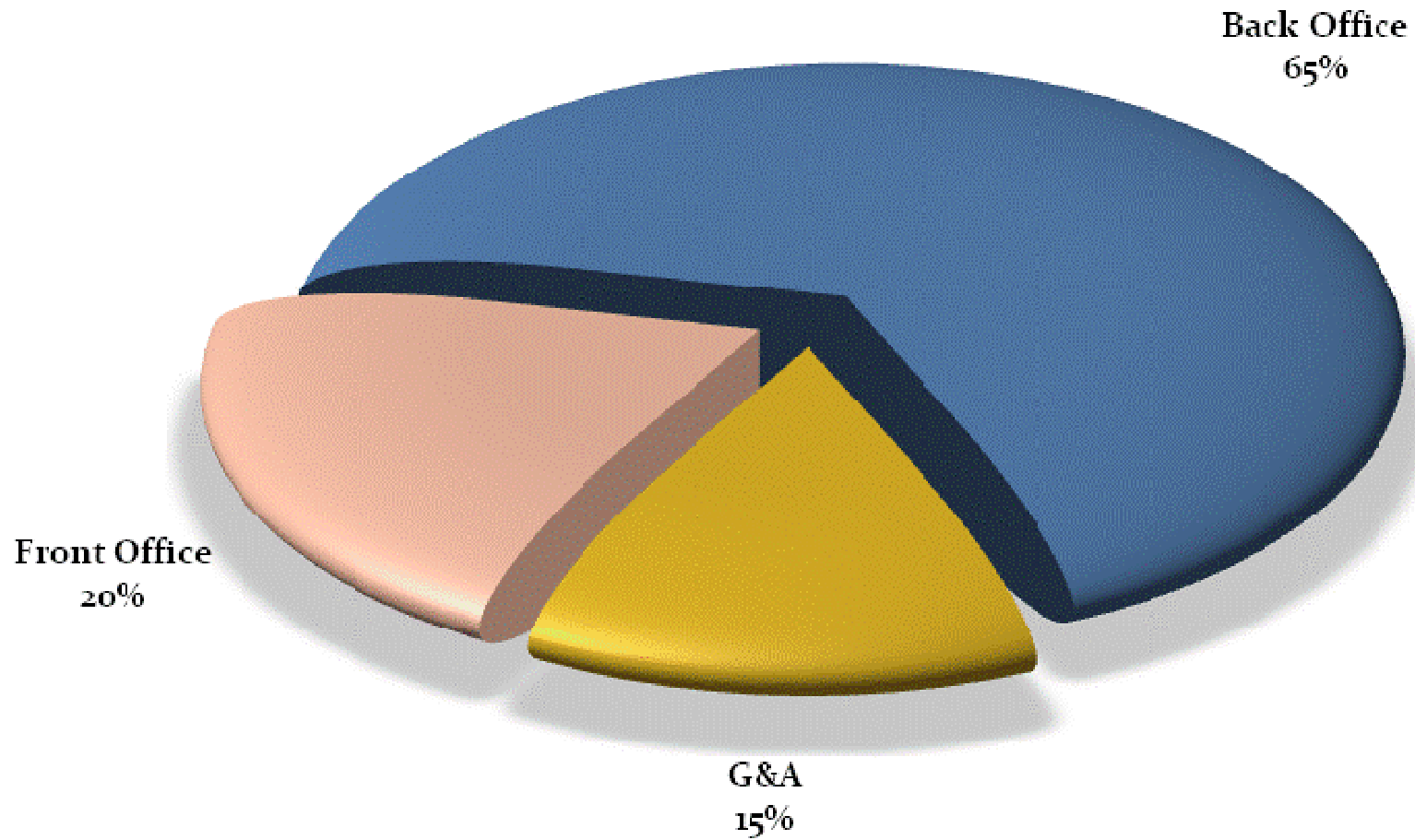
Channel Relations

Marketing

Business Development

Policy/Legal

# Distribution of Human Resources



# Typical Registry SLAs



Service Level Requirement	Requirement
Service Availability – SRS	99.90%
Service Availability – Nameservers	100.00%
Service Availability- Whois	99.95%
Planned Outage Duration - SRS	8 hours
Planned Outage Duration - Nameservers	None Allowed
Planned Outage Duration - Whois	8 hours
Processing Time - Add, Modify, Delete of all objects	95% within 3000 ms
Processing Time – Query Domain	95% within 1500 ms
Processing Time – Whois Query	95% within 1500 ms
Processing Time - Nameserver Resolution	95% within 1500 ms
Update Frequency – Nameserver	95% within 15 minutes
Update Frequency - Whois	95% within 15 minutes

# Transaction Statistics

## Typical Monthly Transaction Volumes in .BIZ

- **160M EPP transactions**
- **10B DNS queries**
- **65M WHOIS queries**
- **Over 5,000 simultaneous registrar connections**
- **Over 50GB of reports provided to registrars**

# Outsourcing vs. Doing it Yourself



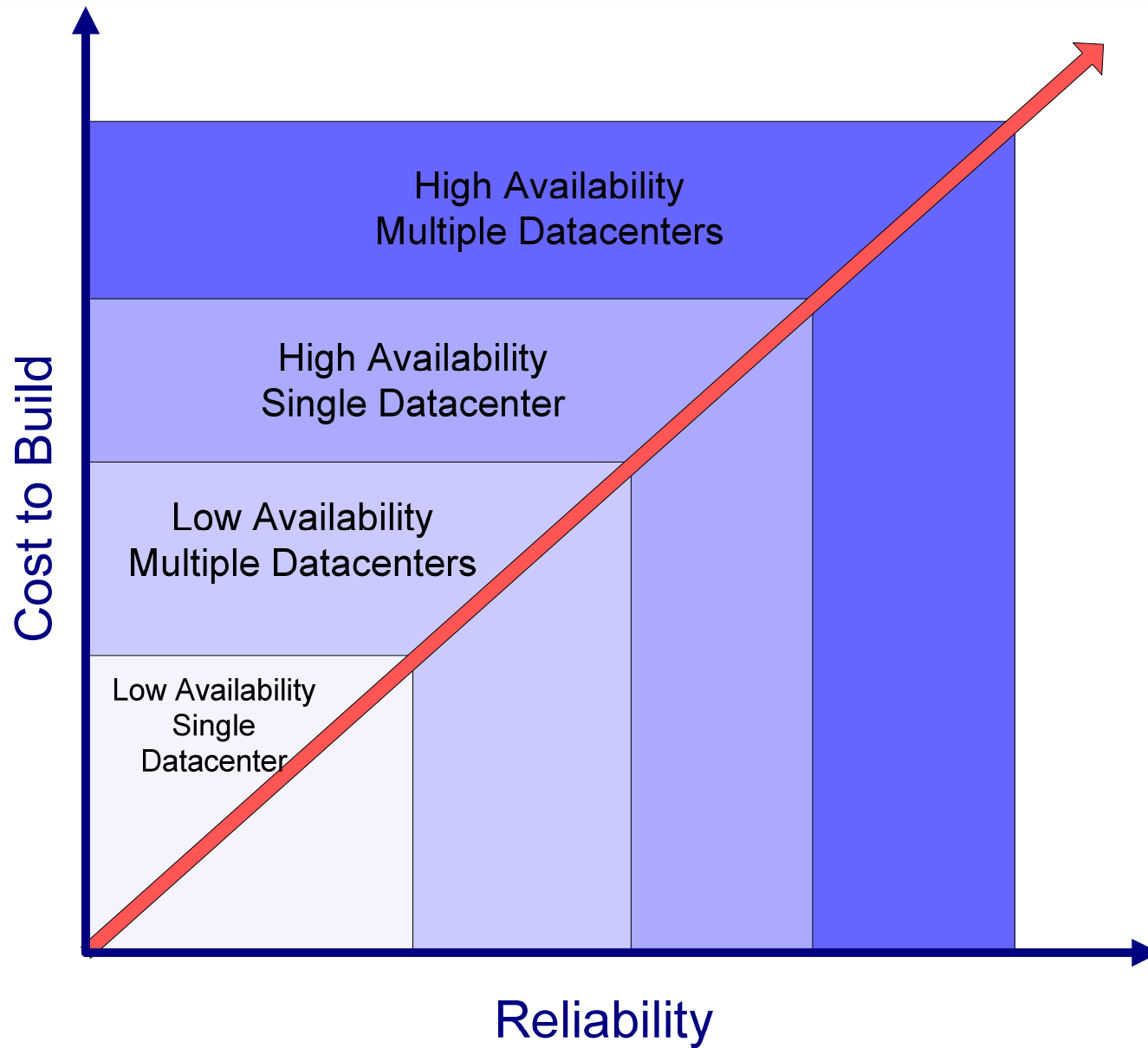
## Advantages of Outsourcing

- Lower start-up costs
- No ongoing operational costs
- Registry provider is subject to SLAs
- Leverage existing, proven registry technology
- Can focus on policy and marketing issues

## Advantages of Doing it Yourself

- You own and control all the back-end systems
- Full control and oversight of the operations
- No outsourcing fees

# Reliability vs. Cost to Build

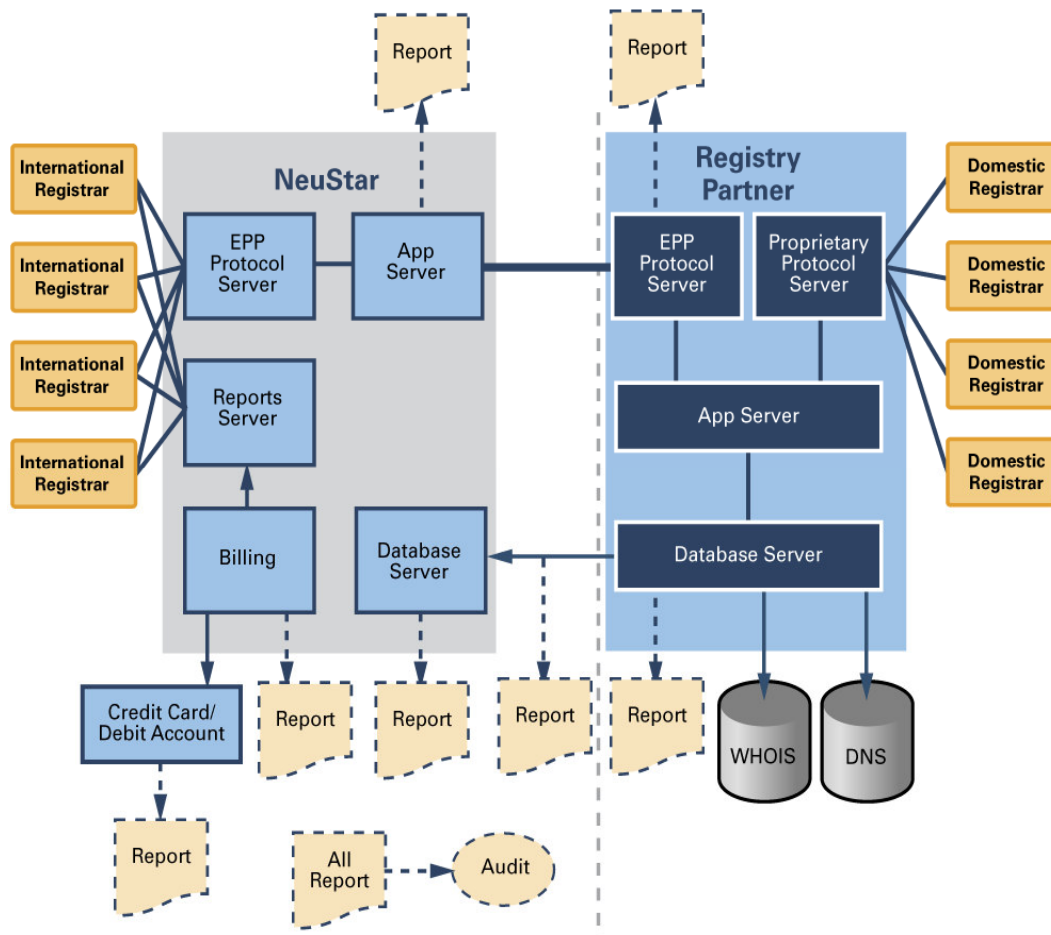


# Recommendations



- **Find a capable and reliable partner to help build your own registry or operate the backend for you**
- **Build your system to be secure, robust and scalable**
- **Keep business rules as simple as possible if your goal is to grow your registrations**
- **Plan for future technologies such as IPV6, IDNs and DNSSEC**
- **Focus on policy, marketing and expanding your registrar channel**

# Registry Gateway Solution



- Immediate access to an extensive international base of registrars
- Extensive channel support to help you grow your TLD quickly
- High-level customer support
- Full billing and debit support

**Proven expert in building customized interfaces to registry databases**

# Choose NeuStar for Registry Services



**Proven smooth,  
flexible & efficient  
operations**

**Powers resolution  
of over 30 million  
domain names  
across more than  
20 Internet TLDs**

**International global  
leader; secure &  
customized  
gateway solutions**

**Expert Registrar  
relations, policy  
and technical  
consulting  
services**



***NeuStar helps you  
manage and grow your  
business.***

***Choose Experience***

***Choose NeuStar***



**Thank You**

**Fernando España**  
**Fernando.espana@neustar.biz**

