Staffan.Hagnell@iis.se

.SE-DNSSEC

Commercial launch
of .SE-DNSSEC

Feb 16, 2007

Signing
the .SE zone
Sep 2005

Soft launch
of service

2006

Start of
project
2001
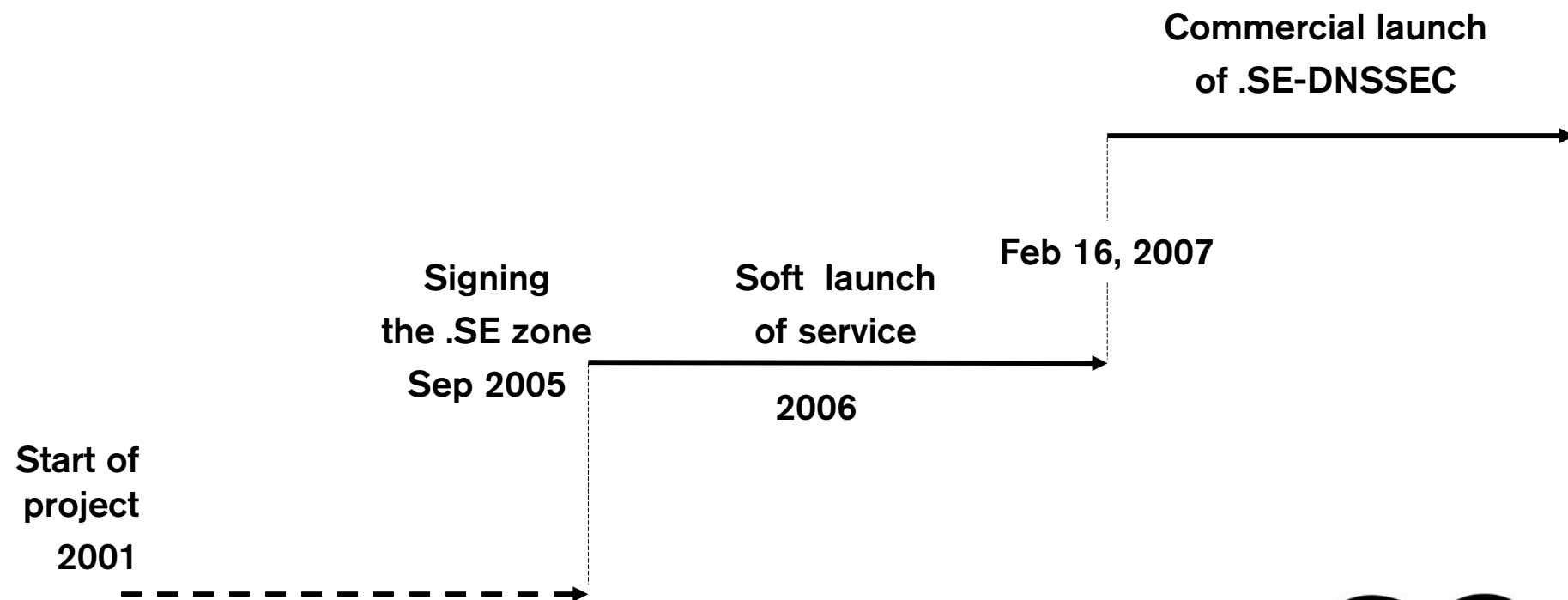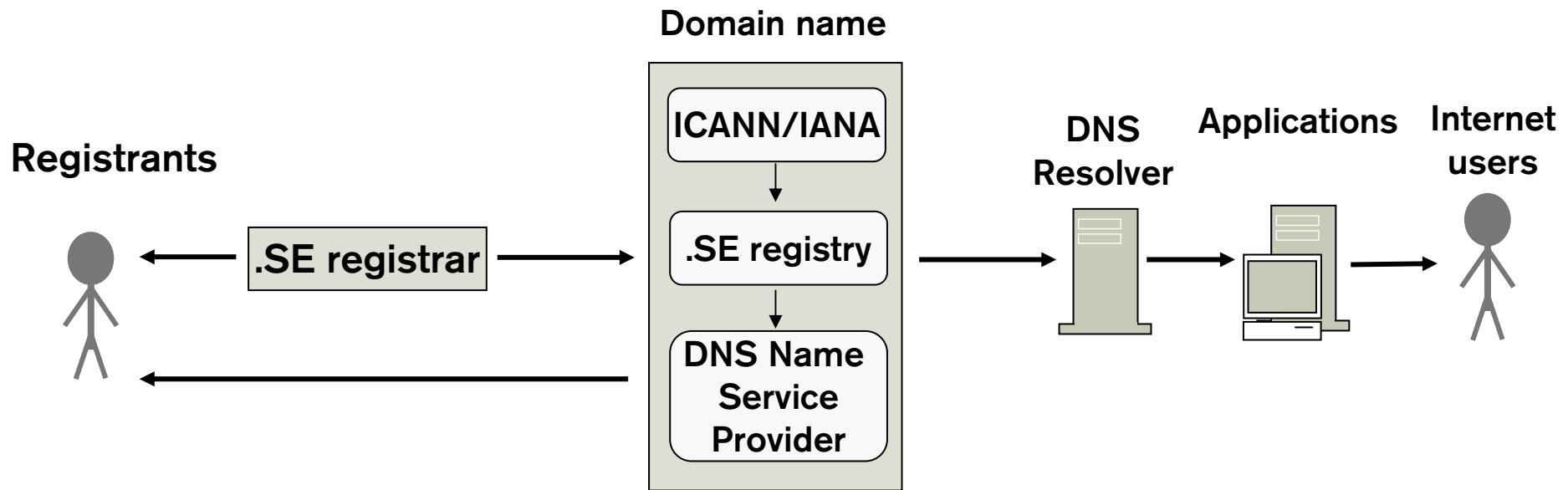
.se

.SE's challenge

- To make DNSSEC into a service…
- …to coordinate all parties needed to add value to the service and to get the market started

.se

Begin with a study of the value chain!

Domain name

Registrants

.SE registrar

ICANN/IANA

.SE registry

DNS Name Service Provider

DNS Resolver

Applications

Internet users
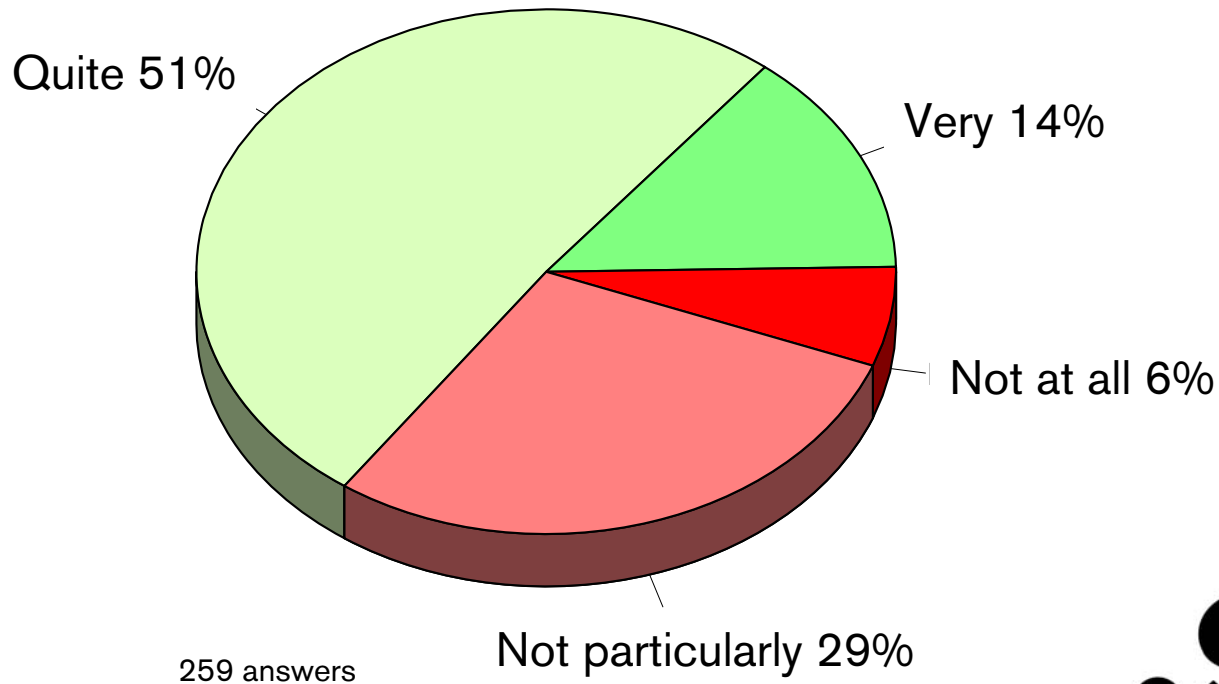
.se

Does the Registrants want DNSSEC?

Market research, November 2006

- Survey to .SE domain name holders

- 1 406 randomly selected, and 259 answers (20%).
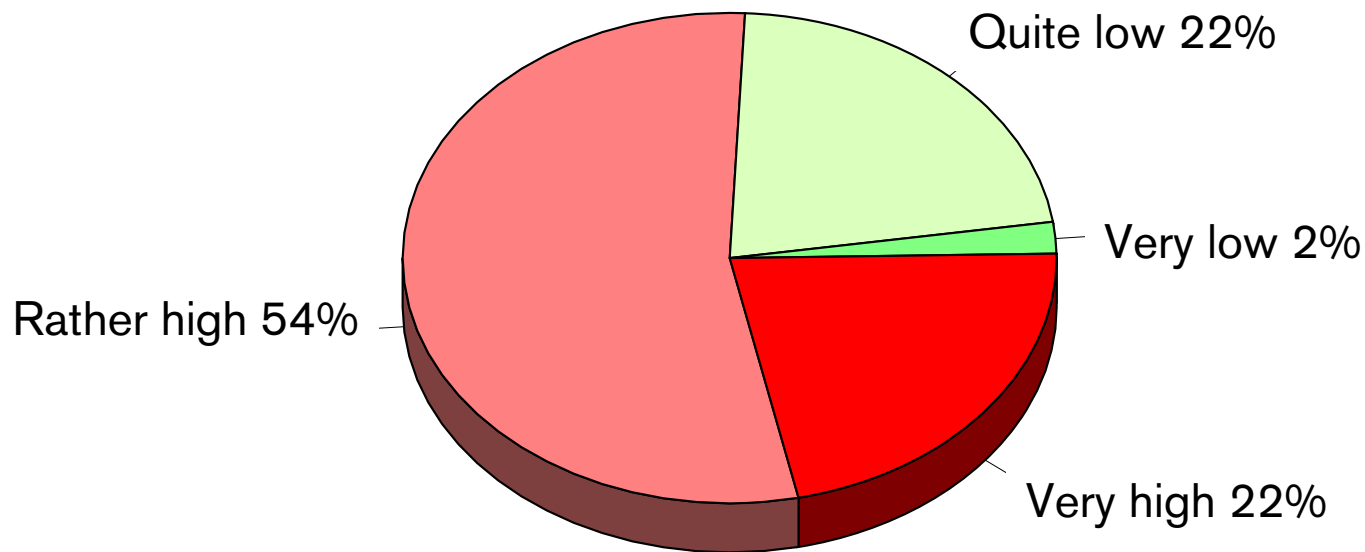
.se

How interesting is DNSSEC?

.SE is planning the commercial launch of .SE-DNSSEC. How interesting is this to you/your company?

Quite 51%

Very 14%

Not at all 6%

Not particularly 29%

259 answers

.se

Are you willing to pay?

How would you react to an annual charge of €50 for this service?

Quite low 22%

Very low 2%

Rather high 54%

Very high 22%

259 answers

The survey indicated €20-€30 to be reasonable price

.se

DNSSEC – values

- Today's use
  - Connection to web sites
  - Delivery of e-mail – where it is going and where it comes from
  - Logging – to whom does the IP address belong?

- Tomorrow
  - IP-telephony (SIP, ENUM)
  - E-mail
    - DomainKeys Identified Mail, DKIM
    - SPF, Sender Policy Framework
  - DNSSEC adapted applications
    - IPsec, SSH, PGP, …
  - DNS as a repository for certificates and keys?

- DNS is becoming a more important infrastructure!

Create value - phase 1

- Validation of DNS data is done in Resolvers
  - IP resolver
  - Resolver in local server
- Value in phase 1
  - When validation is done close to the user, exposure of unprotected DNS data decreases

- *Phase 2*
  - *Validation made by applications*
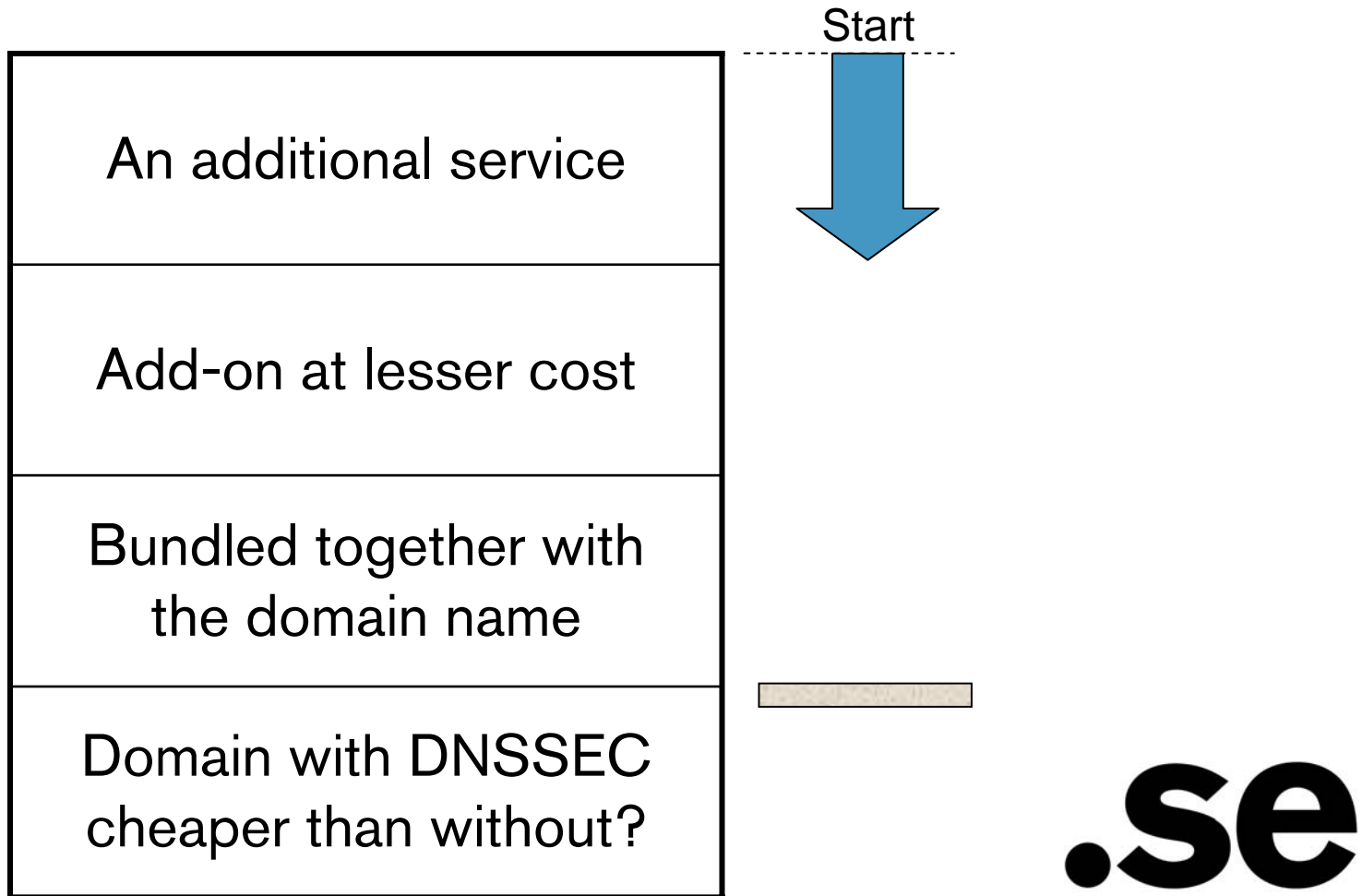
.se

Participants needed to crate value?

Registrants	.SE Regsitrars	DNS Name Service Providers	.SE	Resolver Operators	Applications	Internet Users

Phase 1

Phase 2

Pricing strategy for .SE-DNSSEC

- Caution!
  - Greater risks and problems with a rapid market penetration
- Pricing to stimulate all parties involved
  - Small volume makes it safer for resolver operators to start
  - Sales commission to registrars selling .SE-DNSSEC
  - Need time for system development at .SE
  - Establishment subsidies to name server providers
- We want DNSSEC to be a deliberate choice
  - In order to emphasise the importance of the service
  - In order for name service providers to maintain good quality

.se

Pricing strategy

Start

An additional service
Add-on at lesser cost
Bundled together with the domain name
Domain with DNSSEC cheaper than without?

.se

Necessary activities for phase 1

- Target groups
  - Pilot Registrants
  - .SE Registrars
  - DNS Name Service Providers
  - .SE
  - Resolver Operators

Registrants

- Market survey

- Should be handled by Registrars

- …but .SE will work with important pilot customers
  - Governmental institutions
  - Banking and finance
  - Universities
  - Early adopters with technical interest

- Campaign
  - Information to all .SE registrants
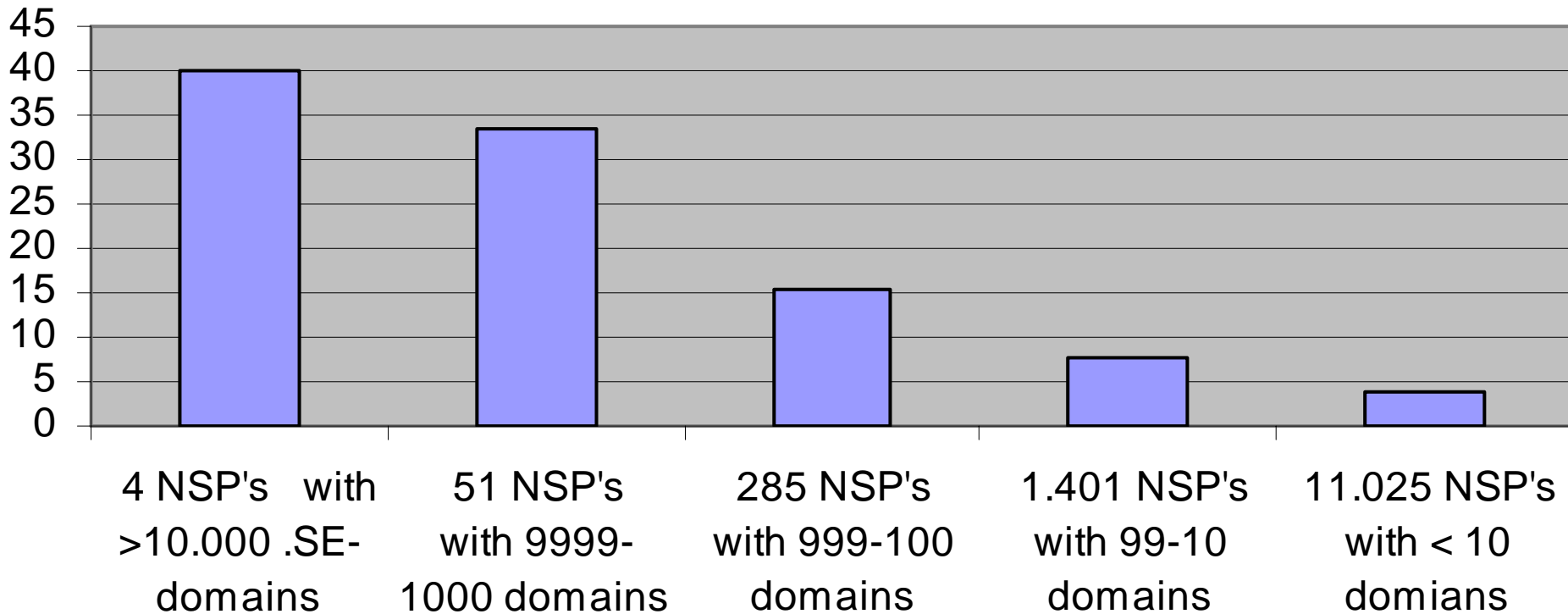 - Newsletter

- Public relations
  - Articles etc.

.se

DNS Name Service Providers

- Those hosting and running DNS for the Registrants

- Who are they?

- How can we attract them to offer high-quality DNSSEC services?

.se

.SE Domains
by DNS Name Service Providers (NSP's)

% of the total numbers of .SE-domains

4 NSP's with >10.000 .SE-domains	51 NSP's with 9999-1000 domains	285 NSP's with 999-100 domains	1.401 NSP's with 99-10 domains	11.025 NSP's with < 10 domians

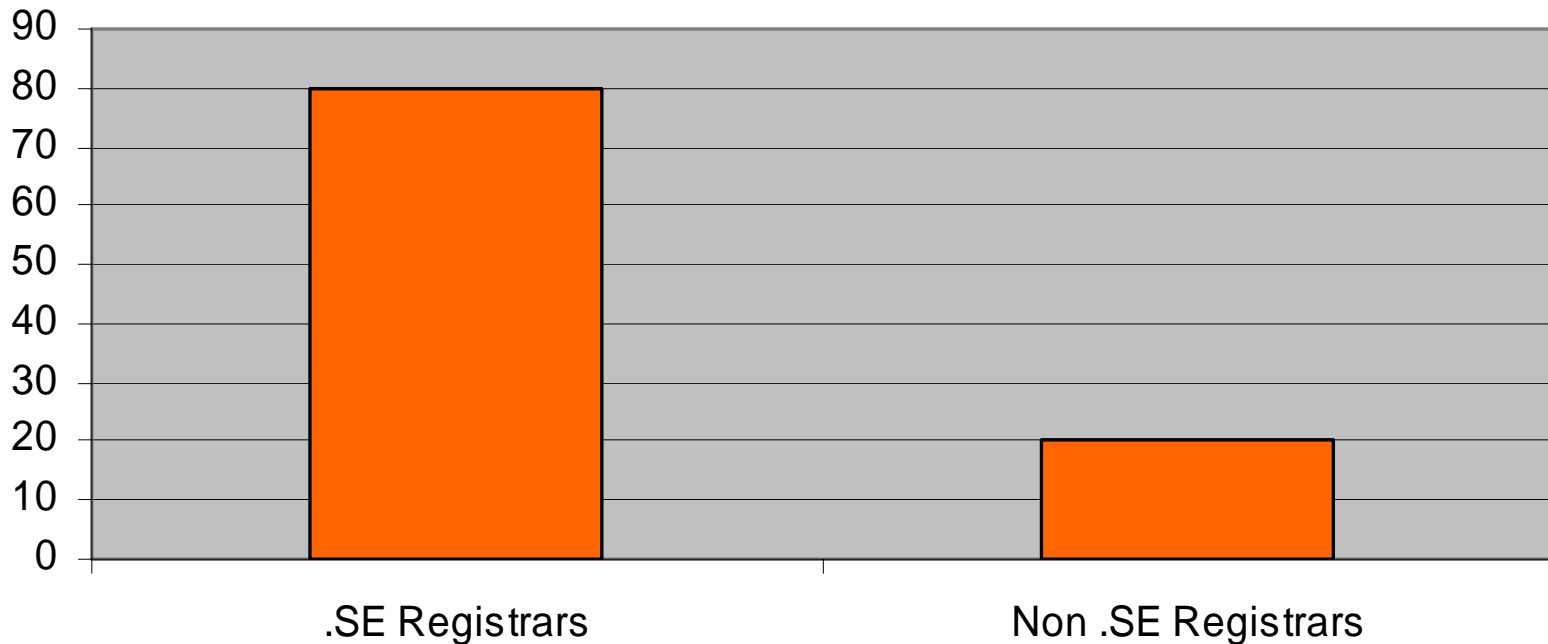*In total: 12 ,766 DNS Name Service Providers, March 2007*

Share of domains held by largest DNS Name Service Providers
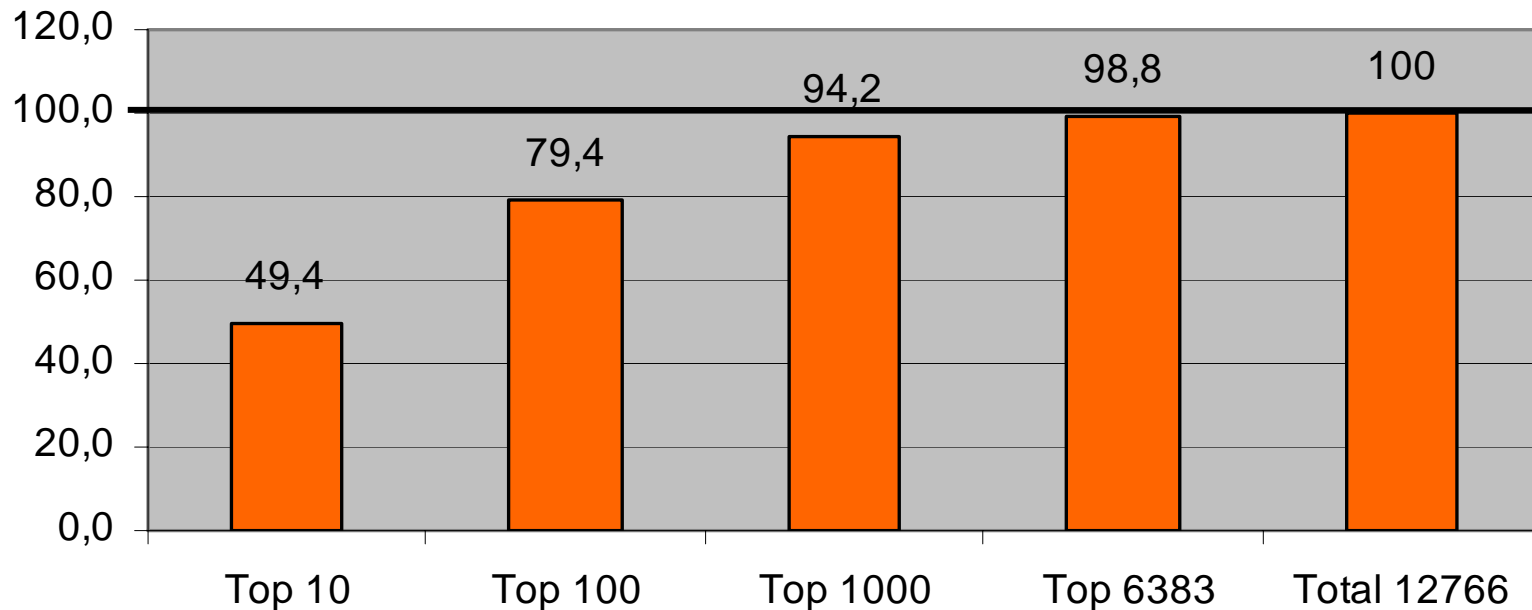
.SE registars are DNS Name Service Providers as well

Estimated share of .se domains run by registrars

Activities for DNS Name Service Providers

- ## Development
    - Supply one or more reference platform with automated tools for the administration of DNSSEC
    - Possibility of establishment subsidy

- ## Education
    - Courses
    - Work shops

.se

.SE's registrars

- Five registrars from day 1
- Drive for getting more Registrars to provide DNSSEC
  - Kick-back on first 5,000 registrations
  - Establishment subsidies

- Offer direct registration if not a functioning reseller market occurs!

.se

Resolver operators

- ## Who are they?
  - .SE answers to anyone who asks!
  - Tens of thousands of resolvers throughout the world

- ## Pilots
  - The four largest ISP's covers 80-90 % of the Swedish market for broad band connection
  - They are positive to DNSSEC

- ## How to distribute .SE's public keys for DNSSEC?

.se

.SE's internal work

✓ Key signing and signing of the .SE zone

● Some of our work
  - Development of .SE's system for customer administration
  - Manual administration in the meantime
  - Signing of .SE's own domains
  - Test tools for DNSSEC on customer domains
  - Additional agreement to contracts with registrars and domain name holders
  - ….

.se

Key findings

Registrants	• Bigger interest for DNSSEC than we expected. • Often, before applying DNSSEC the present DNS Name Service should be reviewed.
.SE Registrars	• Requirements of system adjustment and development. • With some exceptions, the Registrars has to be motivated
DNS Name Service Providers	• The market is consolidating. A few large players. • The service (DNS) is taken for granted (at no cost) and the quality isn't an issue. • Tools for administration of DNSSEC is lacking.
.SE	• Requirements of system development
Resolvers	• Good start! The large Swedish ISP's are willing to enable DNSSEC in their resolvers serving their customers
Applications	*Missing*
Users	*How to make them DNSSEC aware?*

Conclusion

- We have started with DNSSEC!
  - Pilot Registrants, .SE registrars, DNS Name Service Providers, .SE, Resolver operators

- We will continue our dedicated work to spread DNSSEC within .SE!

- We encourage all Registrars, DNS Name Service provider, Resolvers to begin now
  - It's easy now when the volumes still are low
  - You will need time to develop your internal systems