

# Hacking the Monolith

## A Case Study

SVT interaktiv - JFokus 2015

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A silhouette of a high jumper in mid-air, clearing a bar. The jumper is positioned on the left side of the frame, with their body arched over the bar. The bar is a thick black line extending from the bottom left towards the top right. The background is a clear blue sky with a bright sun in the upper right corner, creating a lens flare effect. The jumper's hair is blowing in the wind. The overall scene is captured from a low angle, emphasizing the height of the jump.

Keep the bar low





James Bond? Nej det är Pepparkornen!

Se Pepparkornen på jakt efter

Få nyhetsköll med Lilla Aktuellt

Se fler nyheter p

19.30: Chatta om Geografens testamente

SVT.se Program Nyheter Sport Barn

ONSDAG 28 JANUARI

Nyheter Sport Kultur Regionalt Opinion

Inrikes Utrikes Ekonomi Vetenskap Oddsat Uutiset Nyhetstecken SVT

INTEGRATIONSDEBATT



Gymping

Knip med Susanne Lanefelt

Rekommenderat

Start Program Inställningar Sök

Sveriges skidhjärlar Avsnitt 3

Hollyoaks Avsnitt 173

Gift vid första ögonkastet - ... Avsnitt 2: Vigseln

Låt oss ställa till en scen Avsnitt 2

Gynekologen i Askim Avsnitt 1

Henrik Henrik



svt play Start Program Kanaler

Sök på SVT Play

Sök i Öppet arkiv



Visa alla

na på slottet Avsnitt 5

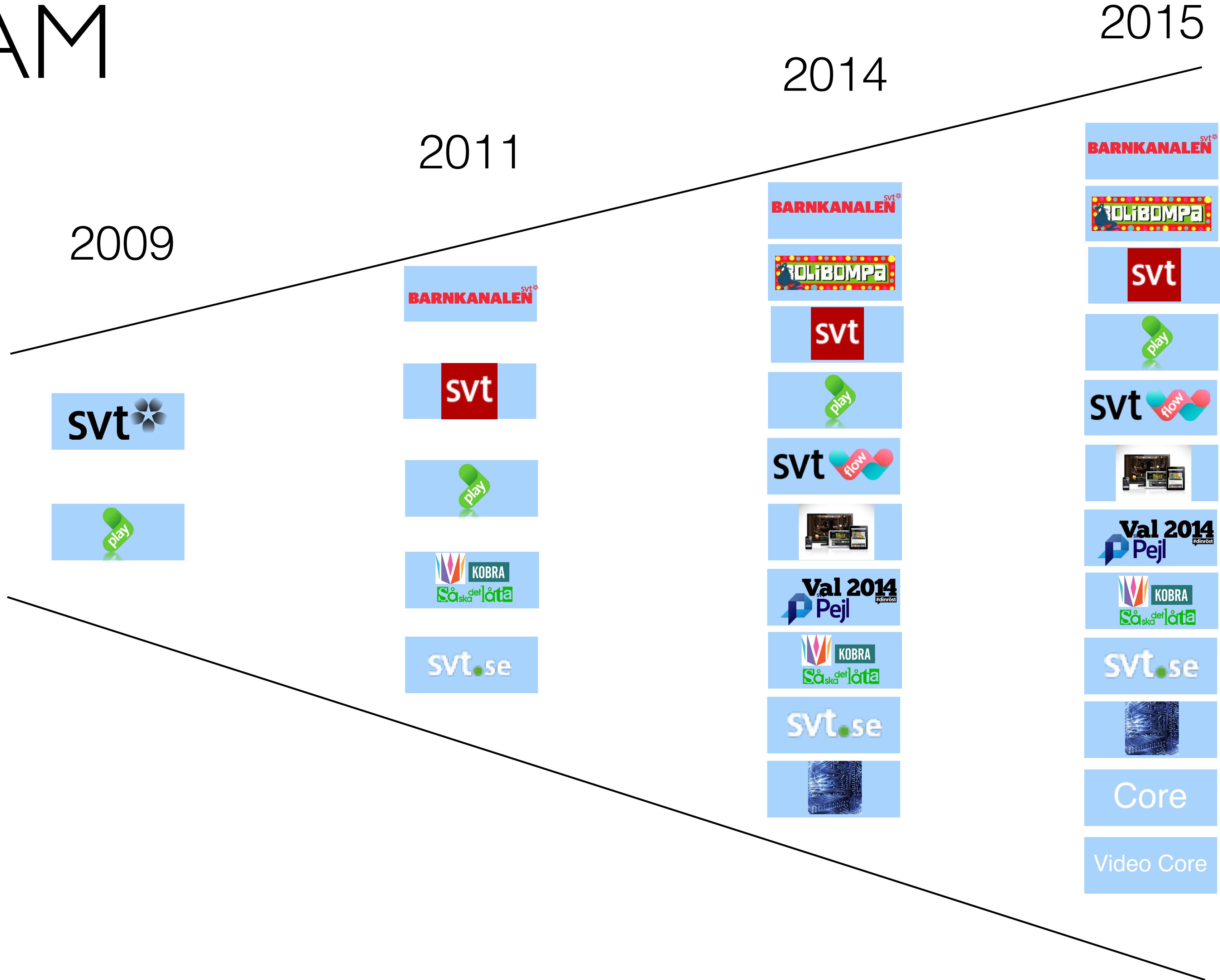
På spåret Säsong 25 - Avsnitt 9

Skavian Säsong 13 - Avsnitt 3

Blå ögon Säsong 1 - A



# TEAM







$\approx$  120 man-year code



The image features a blue-tinted architectural drawing of a building floor plan. The drawing shows a complex grid of lines representing walls, rooms, and structural elements. Overlaid on the left side of the drawing is a 3D model of a column and capital. The column is a simple, tapered cylinder, and the capital is a more complex, multi-tiered structure with a circular top. The text "New Architecture!" is centered over the drawing in a large, bold, black font.

**New  
Architecture!**





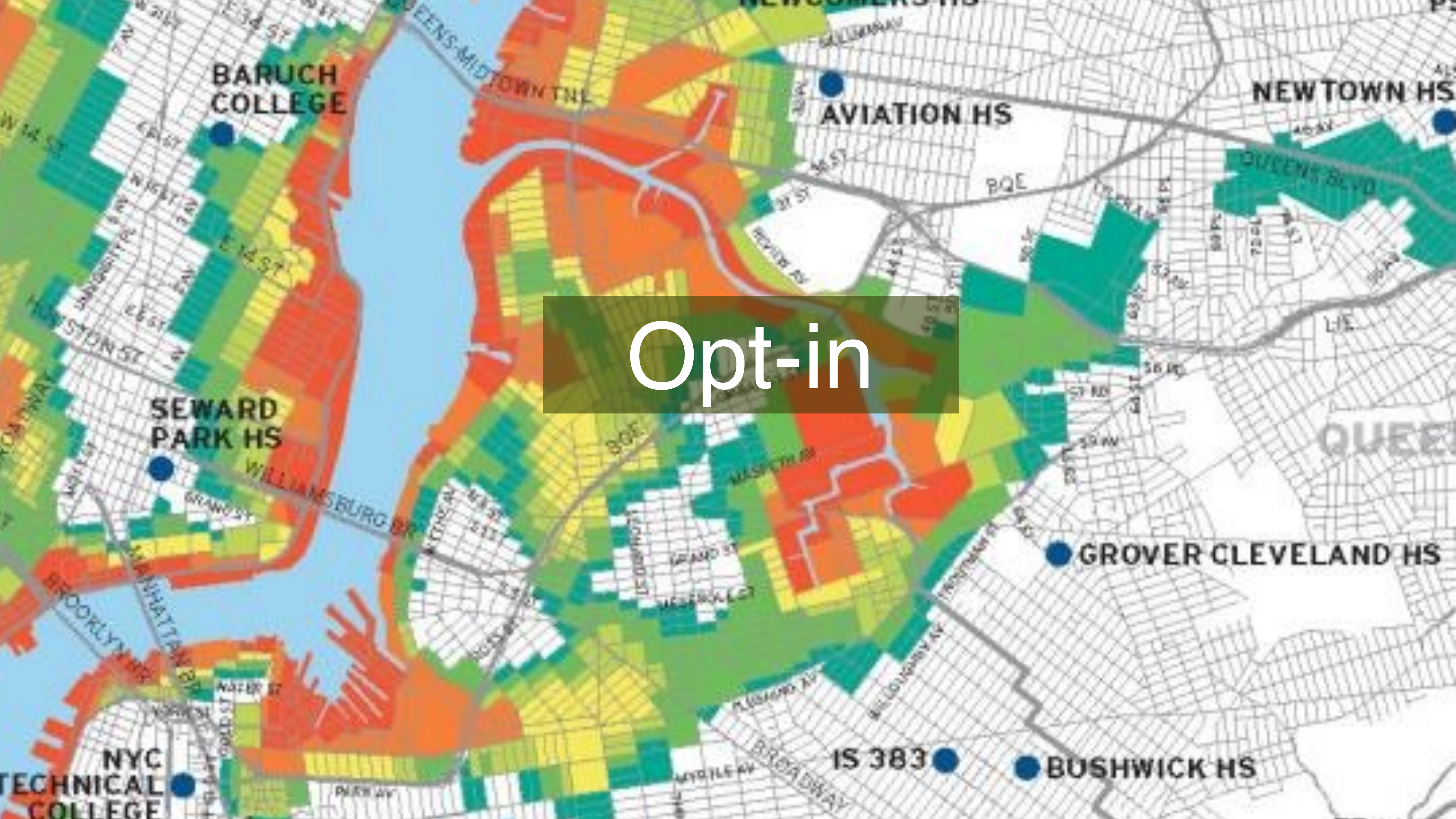
# Culture





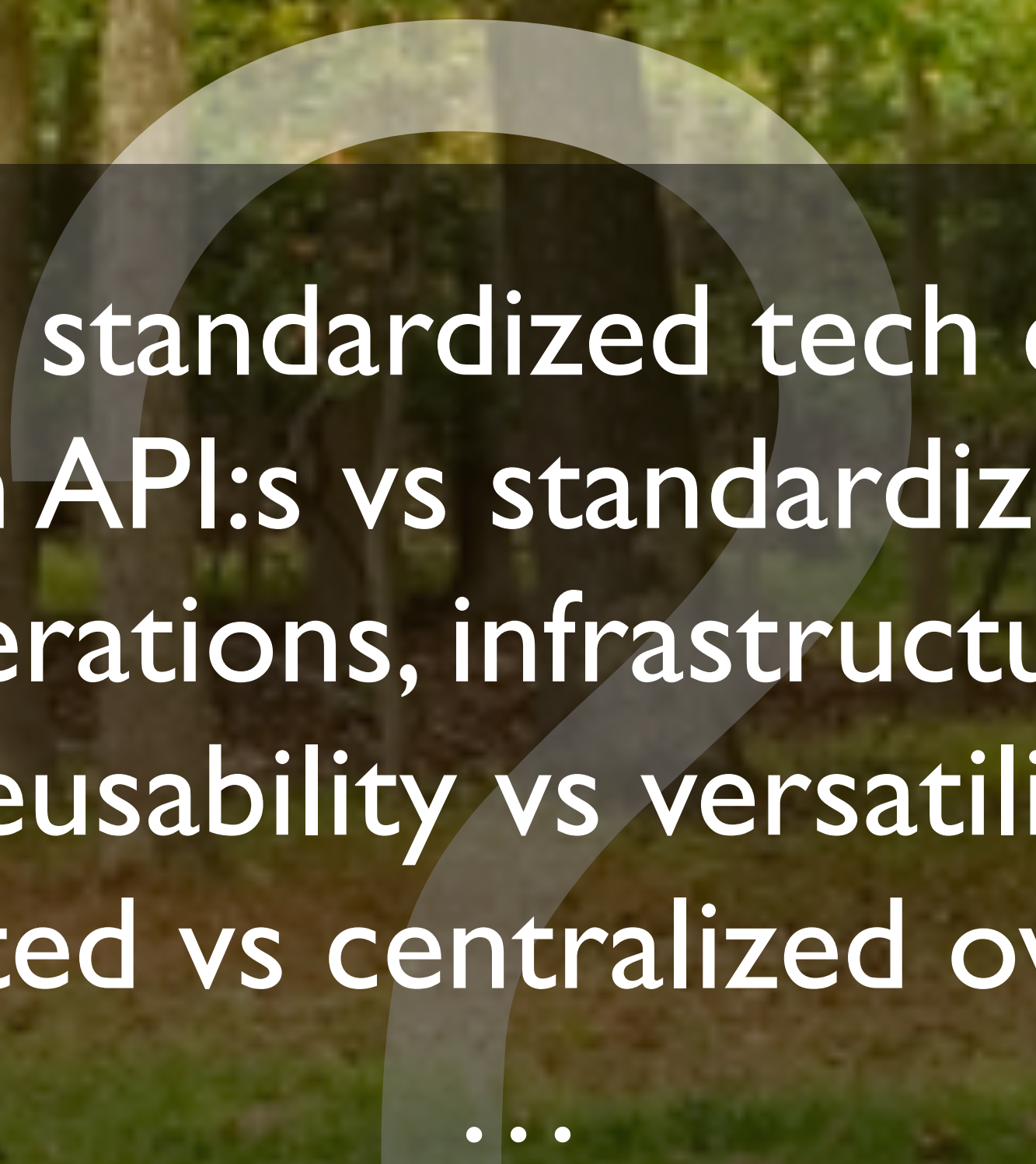
# Autonomy





Opt-in





Free vs standardized tech choices  
Custom APIs vs standardized APIs  
Common operations, infrastructure, logging, ...  
Reusability vs versatility  
Distributed vs centralized ownership  
...







**Free** over standardized tech choices  
**Custom APIs** over standardized APIs  
**Recommended** over common operations, infra, logging  
**Versatility** over reusability  
**Distributed** over centralized ownership

...



A low-angle photograph of a modern building with a distinctive wavy, white facade. The building features multiple levels of balconies with white railings, creating a rhythmic, undulating pattern. The sky is a clear, bright blue with a few wispy white clouds. The overall aesthetic is clean, modern, and architectural.

# Microservice Architecture



# Why micro services?

1. Easier to create team autonomy
2. Simplify scaling and maintenance
3. Improve resilience and monitoring
4. Make it more fun to develop



A close-up, high-resolution photograph of a Buddha's face, showing the eyes, nose, and mouth. The face is carved from a light-colored stone or marble, with a serene and peaceful expression. The lighting is soft, highlighting the texture of the stone and the contours of the face.

“Create greater ownership” - LinkedIn

Give the team full control, no central rules



# Create a platform

1. You should (from a newly installed computer) be able to **modify and deploy an existing project to production in less than 6 hours.**
2. It should take **less than two hours to create a new service** with CI, monitoring, logging.



# Automated deploy at SVT

Jenkins deploys to Heroku or internal to “Molnet”



# Automated deploy at SVT - “Molnet”

```
$> moln app create crash-course  
$> moln app image set crash-course /hello-world:1.0  
$> moln app targets set crash-course  
sto.molnet.svt.se=stomoln01-agent01  
drs.molnet.svt.se=drsmoln01-agent01  
$> moln app deploy crash-course:v1  
$> moln app undeploy crash-course:v1
```



# Automated deploy at SVT - “Molnet”

- Docker. Packaging and running services
- Helios. **Orchestration** of services.
- Consul. System for **configuration** and **service discovery**.



# Automated deploy at SVT - “Molnet”

Open source: <https://github.com/SVT/helios-consul>



# Micro services gives (new) requirements

1. Automated deploy - Continuous Integration
2. Monitoring
3. Resilience



# Resilience at SVT

Hystrix from Netflix.

1. Isolate network interaction using Circuit-Breakers, BulkRequests, Timeouts
2. Fallbacks and graceful degradation
3. Metrics. req/sec, failures, responsetimes

<https://github.com/Netflix/Hystrix>



# Web Prod Apdex



Last updated at 15:51

Mon Feb 02 2015

15:51:41

# VideoApi Prod Apdex



Last updated at 15:51

# Jenkins Status



# PlaylistApi Prod Apdex



Last updated at 15:51

# Hystrix Stream: prod

## Circuit

Success | Short-Circuited | Timeout | Rejected | Failure | Error %

### BolibompaPlayableVideoCommand



### BolibompaVideoListCommand

0 | 0 | 0.0 %  
0 | 0 | 0

Host: 0.0/s

Cluster: 0.0/s

Circuit Closed

Hosts 2 90th 41ms  
Median 37ms 99th 41ms  
Mean 33ms 99.5th 41ms

### PlayListCommand

0 | 0 | 0.0 %  
0 | 0 | 0

Host: 0.0/s

Cluster: 0.0/s

Circuit Closed

Hosts 2 90th 10ms  
Median 10ms 99th 10ms  
Mean 10ms 99.5th 10ms

### VideoCommand

8 | 0 | 0.0 %  
0 | 0 | 0

Host: 0.4/s

Cluster: 0.8/s

Circuit Closed

Hosts 2 90th 194ms  
Median 81ms 99th 451ms  
Mean 82ms 99.5th 451ms

### VideoListCommand

0 | 0 | 0.0 %  
0 | 0 | 0

Host: 0.0/s

Cluster: 0.0/s

Circuit Closed

Hosts 2 90th 37ms  
Median 36ms 99th 37ms  
Mean 20ms 99.5th 37ms

## Thread Pools

### Boli...deoCommandThreadPool

Host: 0.0/s  
Cluster: 0.0/s  
Active 0 Max Active 0  
Queued 0 Executions 0  
Pool Size 50 Queue Size 250

### BolibompaVideoCommandThreadPool

Host: 0.0/s  
Cluster: 0.0/s  
Active 0 Max Active 0  
Queued 0 Executions 0  
Pool Size 20 Queue Size 100

### PlayListCommandThreadPool

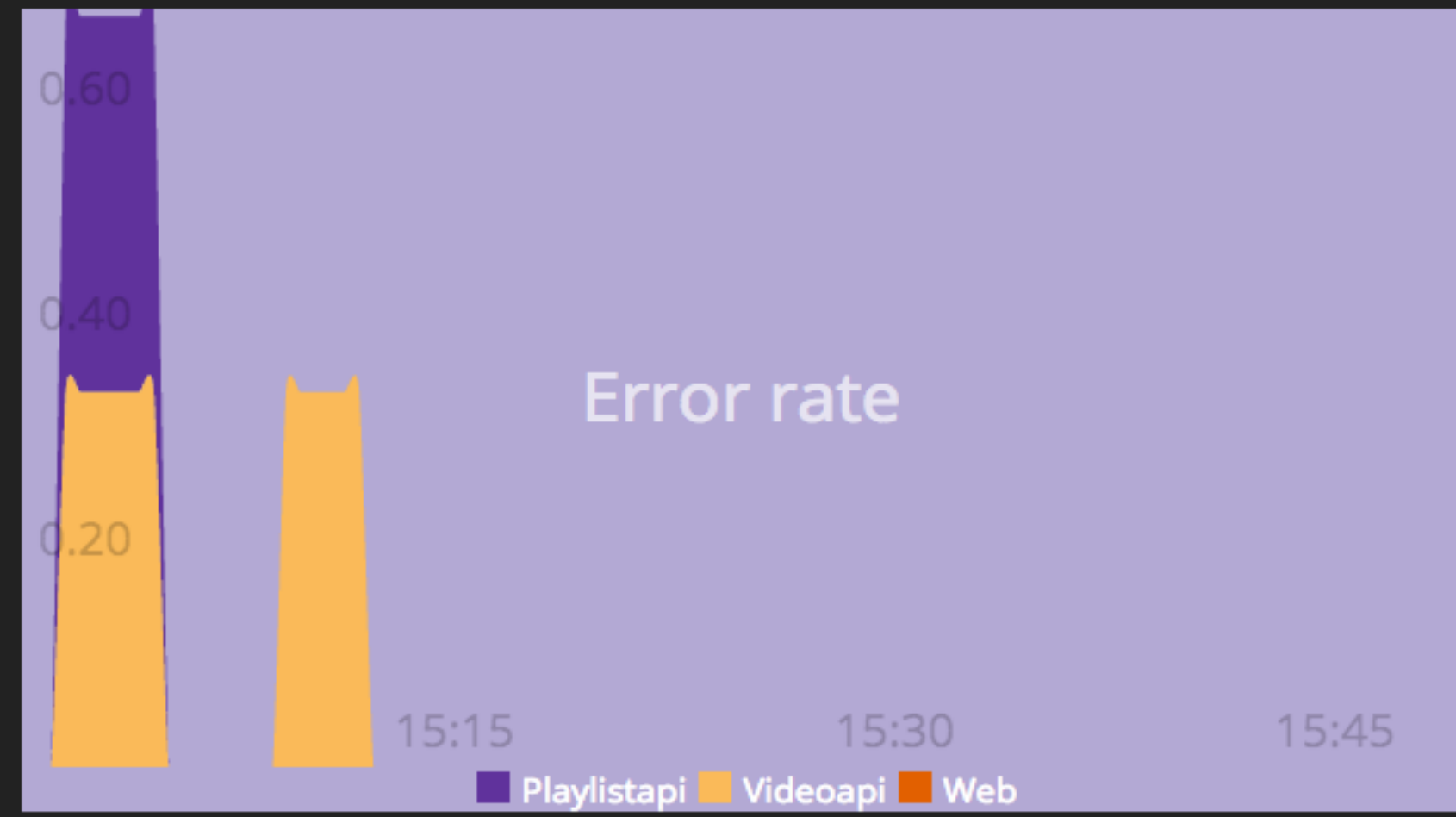
Host: 0.0/s  
Cluster: 0.0/s  
Active 0 Max Active 0  
Queued 0 Executions 0  
Pool Size 20 Queue Size 50

### VideoCommandThreadPool

Host: 0.0/s  
Cluster: 0.0/s  
Active 0 Max Active 0  
Queued 0 Executions 0  
Pool Size 20 Queue Size 100

### VideoListCommandThreadPool

Host: 0.0/s  
Cluster: 0.0/s  
Active 0 Max Active 0  
Queued 0 Executions 0  
Pool Size 20 Queue Size 100





# SVT services

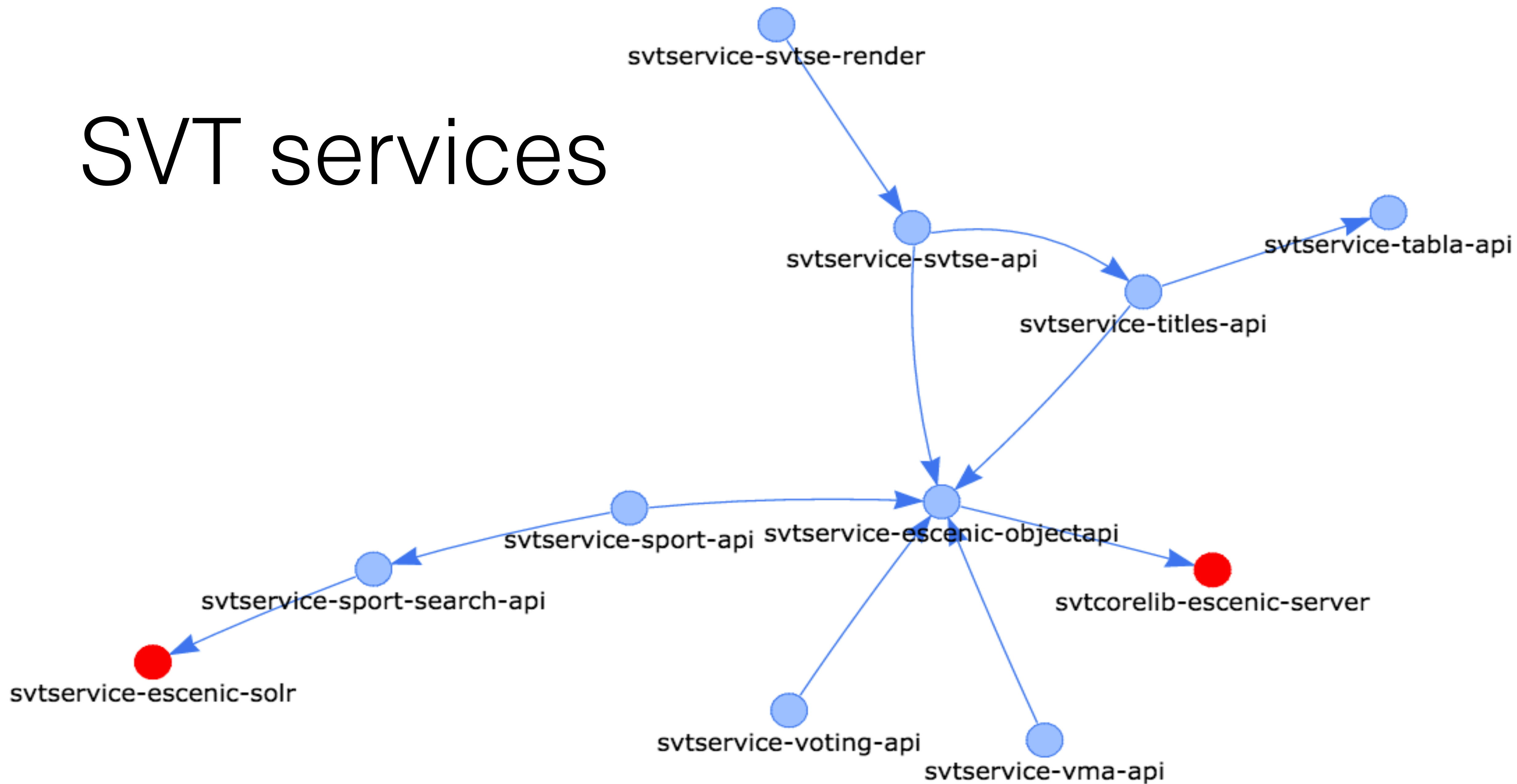
Last update: Fri Jan 30 2015 11:31:08 GMT+0100 (CET). Raw data: [svtservices.json](#).

## Service dependencies

Name	Description	README.md	svtservice.yml	Owner	Team
<a href="#">flow</a>	Client for SVT Flow	✓	✓		
<a href="#">flow-api</a>	API for SVT Flow	✓	✓	<a href="#">Sophie Mauléon</a>	
<a href="#">play4api</a>	The API for SVT Play (and friends)	✓	✓		<a href="#">Play</a>
<a href="#">play5</a>	SVT Play	✓	✓		<a href="#">Play</a>
<a href="#">svt-popularity</a>	Video popularity service (a.k.a The Pop-App)	✓	✓		<a href="#">Play</a>
<a href="#">svt-sharedcount</a>	Knows about videos' shares in social media	✓	✓		<a href="#">Play</a>
<a href="#">svtservice-barnkanalen-flow-admin</a>	Admin interface for the start page on barnkanalen.se, inlined in a content studio plugin	✓	✓	<a href="#">Nina Mangefors</a>	
<a href="#">svtservice-barnkanalen-render</a>	Web frontend for barnkanalen.se	✓	✓	<a href="#">Nina Mangefors</a>	
<a href="#">svtservice-barnkanalen-renderapi</a>	API for rendering barnkanalen.se	✓	✓	<a href="#">Nina Mangefors</a>	
<a href="#">svtservice-bolibompa-playlistapi</a>	Playlist API for Bolibompa Play.	✓	✓	<a href="#">Erik Wahlgren</a>	<a href="#">Bolibompa</a>
<a href="#">svtservice-bolibompa-videoapi</a>	Video API for Bolibompa Play.	✓	✓	<a href="#">Erik Wahlgren</a>	<a href="#">Bolibompa</a>
<a href="#">svtservice-bolibompa-web</a>	Web frontend for Bolibompa Play.	✓	✓	<a href="#">Erik Wahlgren</a>	<a href="#">Bolibompa</a>
<a href="#">svtservice-escenic-objectapi</a>	The one true way to get data from Escenic	✓	✓	<a href="#">Mats Liljengren</a>	<a href="#">Plattform</a>



# SVT services





# API-guidelines at SVT



1. We do not violate HTTP 1.1
2. We uses rest, Richardson Maturity Model up to and including level 2
3. All API:s uses swagger for documentations.  
([swagger.io](https://swagger.io))
4. All clients adds 'user-agent' to create traceability
5. We uses CORS (not JSONP)



A silhouette of a high jumper in mid-air, performing a Fosbury Flop over a bar. The jumper is positioned on the left side of the frame, with their body arched over the bar. The bar is a thick black line extending from the bottom left towards the top right. The background is a clear blue sky with a bright sun in the upper right corner, creating a lens flare effect. The text "Keep the bar low" is overlaid in white, centered horizontally and slightly below the vertical center of the image.

Keep the bar low



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