

Chances & Challenges

HAHN
AUTOMATION GROUP

12 Years Open Source in a midsize company

Agenda

Introduction

On the Bridge

Lighthouse

Varieties

Platforms

Outlook

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We are HAHN



> 1.250

employees



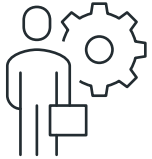
> 12

locations
worldwide



> 30

destination
countries



> 3.600

lines in
operation



> 900

customers



Frank Benke

Head of IT

Computer Science
University Tübingen

Since 1994 in IT Business
Entire Supply Chain

- Hewlett-Packard - HPe (1994)
- Certification & Training
- Supplier & System Integrator
- Magenta Service Provider
- Finally End Customer (2014)



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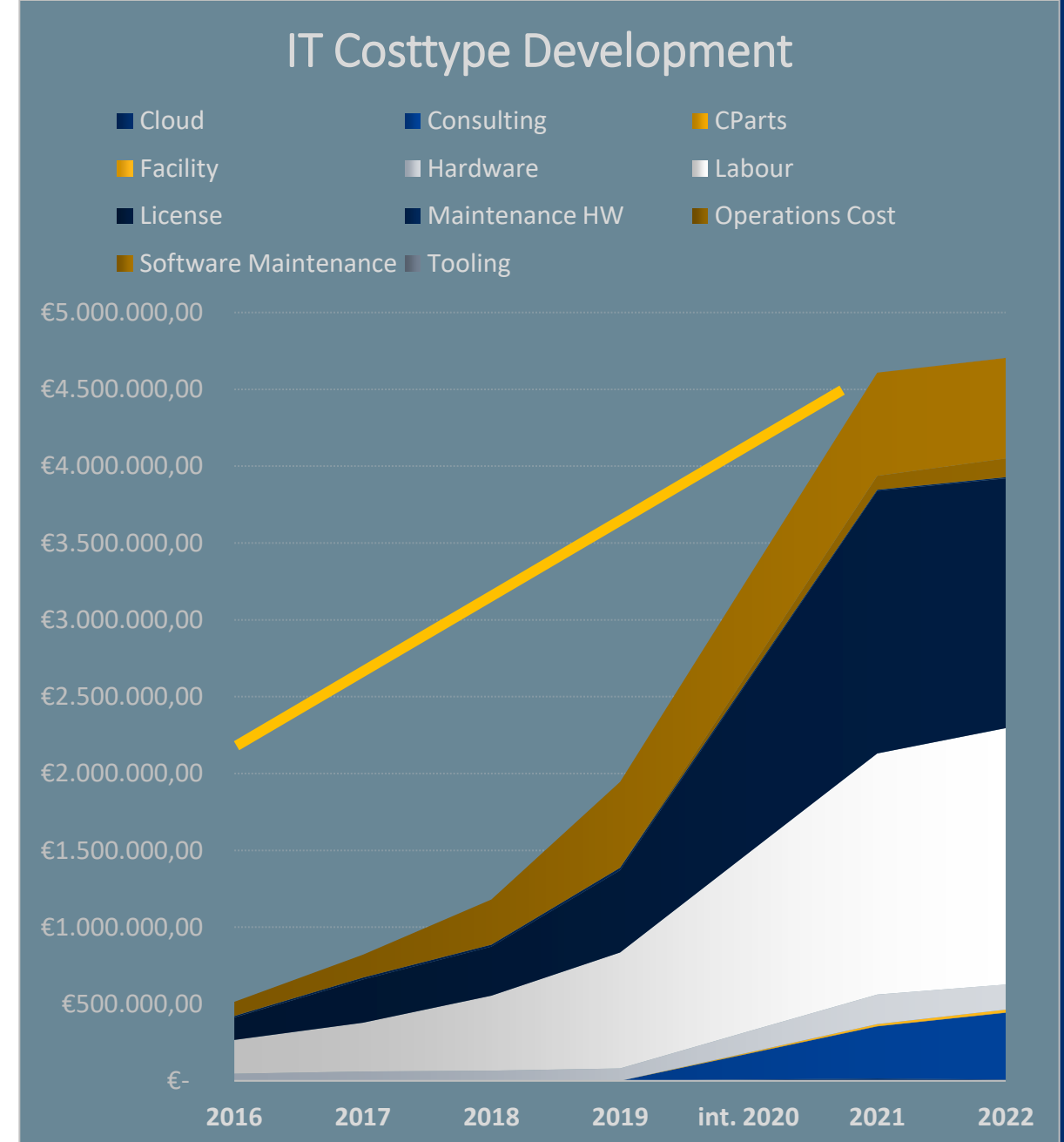
Outlook

On The Bridge Motivation



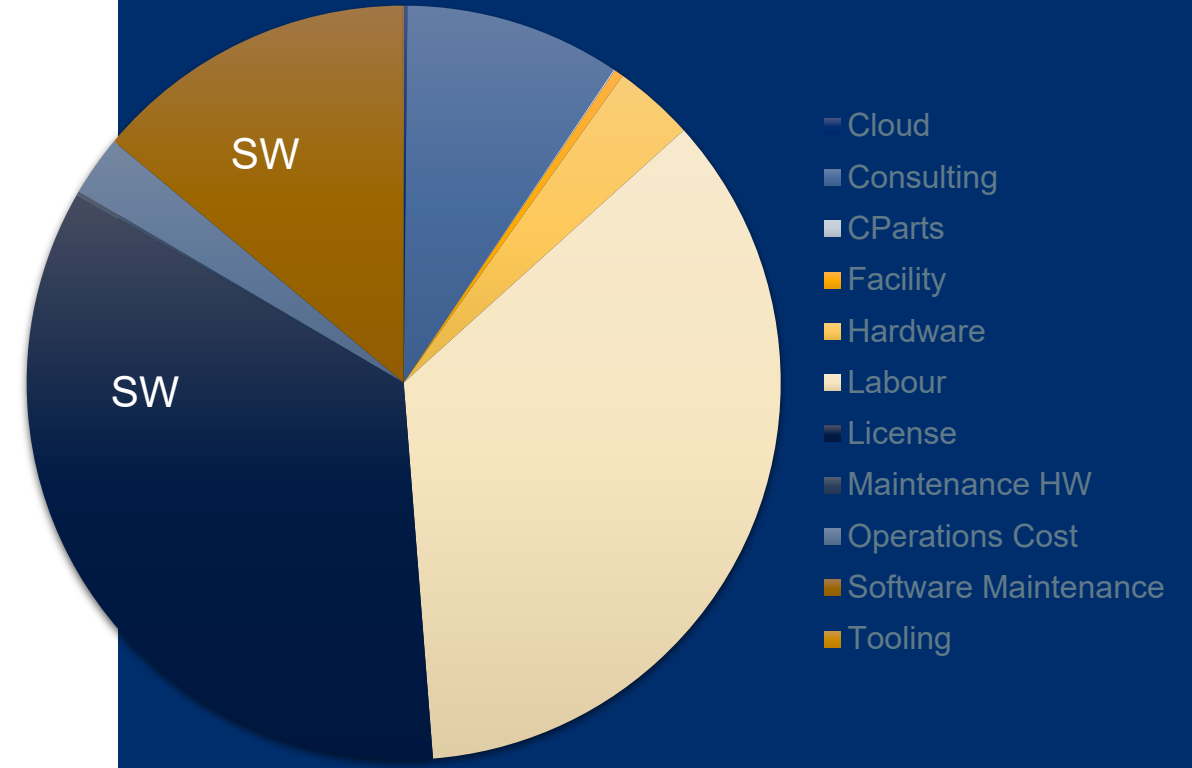
Analyze Cost Development

- Organic & inorganic growth
- Cost transparency
 - Change in metrics & reporting (yl)
 - Service catalog development
- Hardware cost decreases
- Labor cost increases
- Software cost increases
 - Smears differentiation to cloud



Reviewed Budget 2022

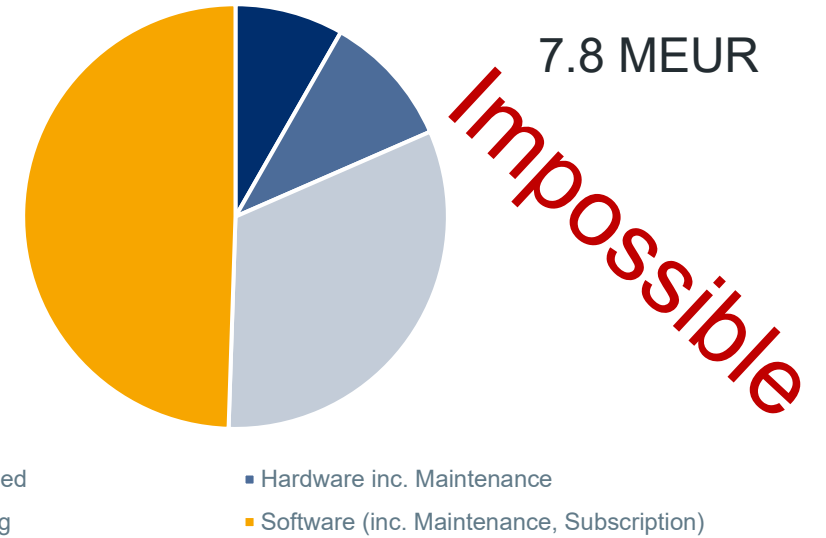
- Budget analyzed 4.7 MEUR
- Reflected in service catalog
- Software related expense 49%
- Internal labor 35%
- Mitigation
 - Operations automation
 - Change software strategy



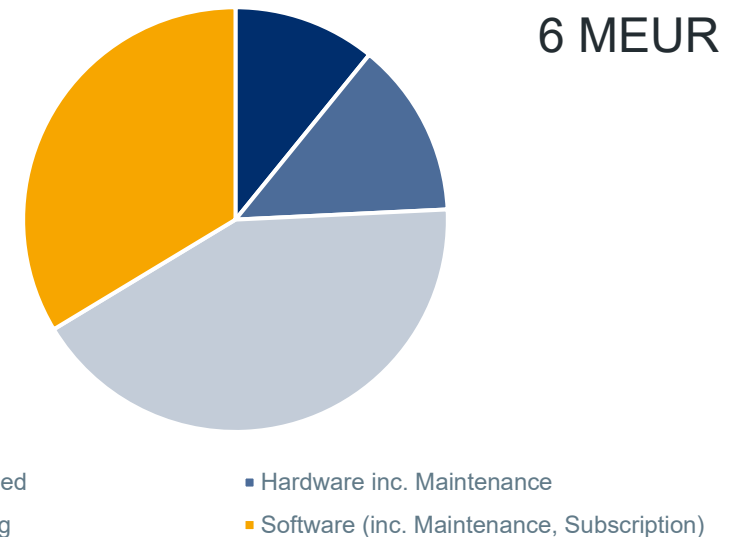
2025 Budget Challenges & Actions

- Predicted cost increase impossible
 - Cover building extensions
 - Cover exploding consulting needs
 - E.g. TISAX, NIS2, CRA & Security
 - Software supplier demands
-
- Extegrate Teamviewer & Thales
 - Cut CAD support
 - Freeze Microsoft licensing
 - Expand open source in infrastructure

2025 - projected



2025 - as is



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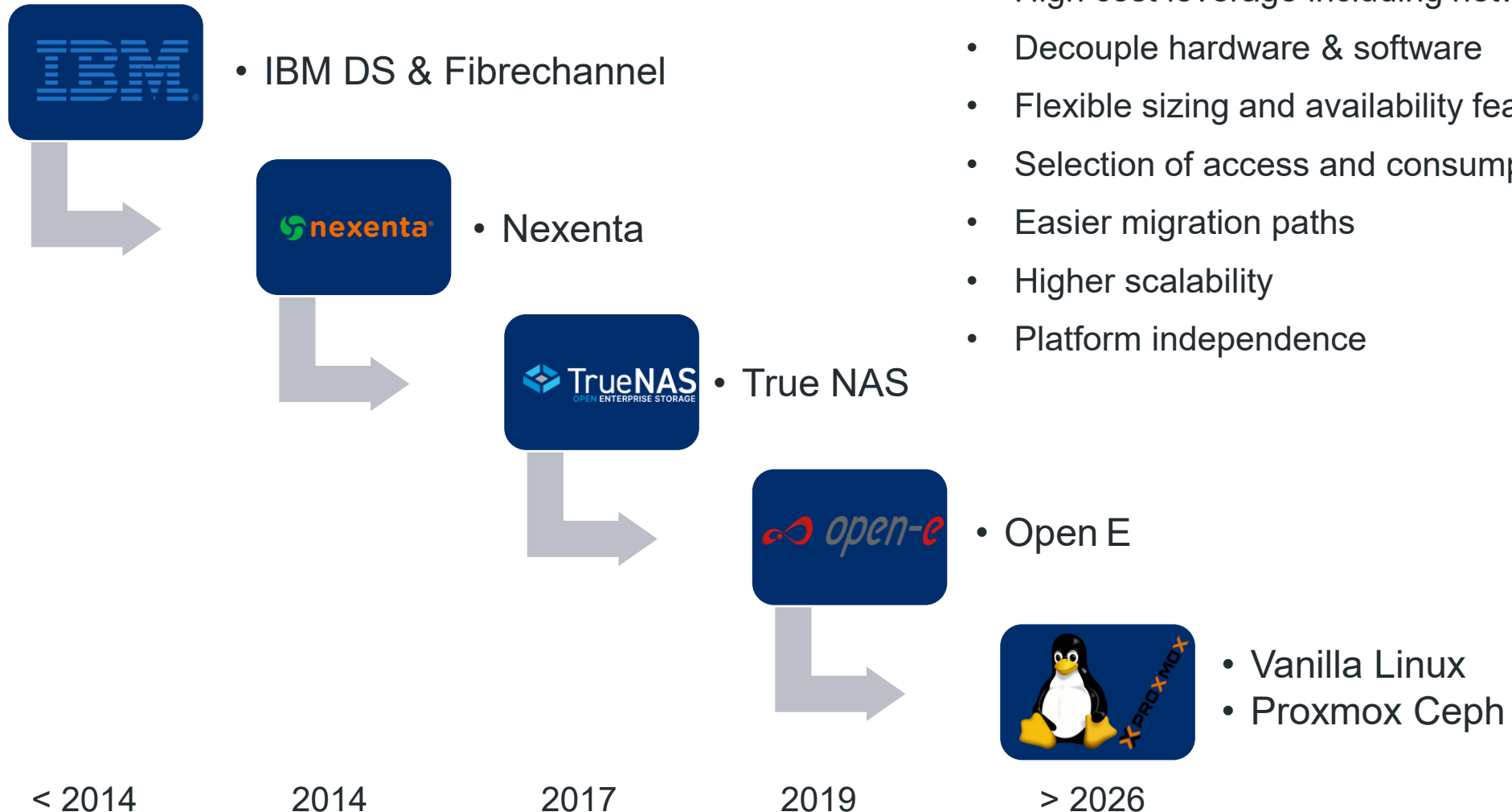
Platforms

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Lighthouse Success Story



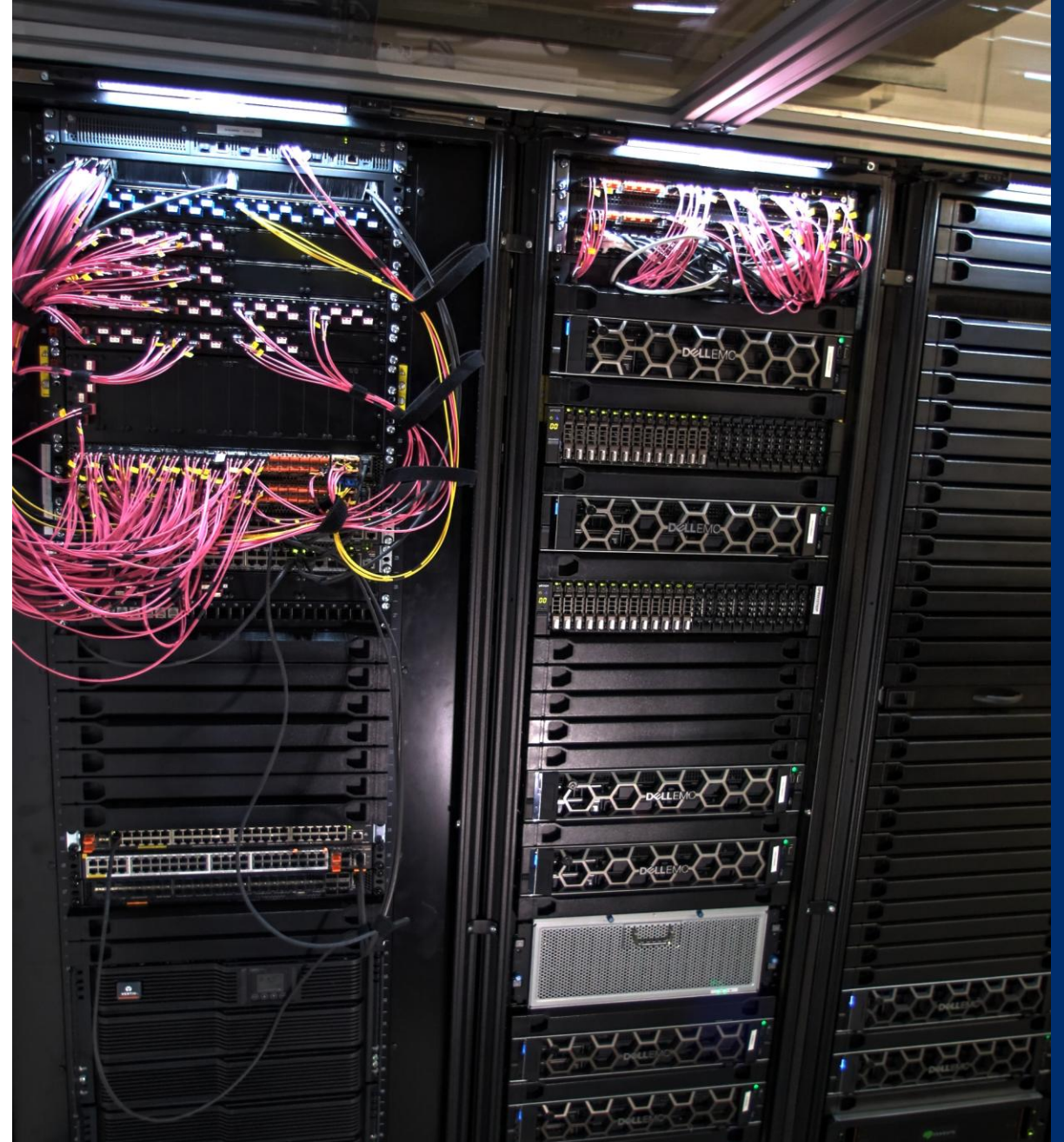
Example Storage Journey



- High cost leverage including network changes
- Decouple hardware & software
- Flexible sizing and availability features
- Selection of access and consumption models
- Easier migration paths
- Higher scalability
- Platform independence

KPIs

- Growth from 30 TB to 7.6 PB
 - Factor 260
- Reduce cost
 - Mitigate network optimization cost
- Eliminate migration cost
- Flexibilization of platform
- Eliminate vendor lock in
- Differentiate service offerings
- Savings vs. traditional quotes est. 7 MEUR in 10 years



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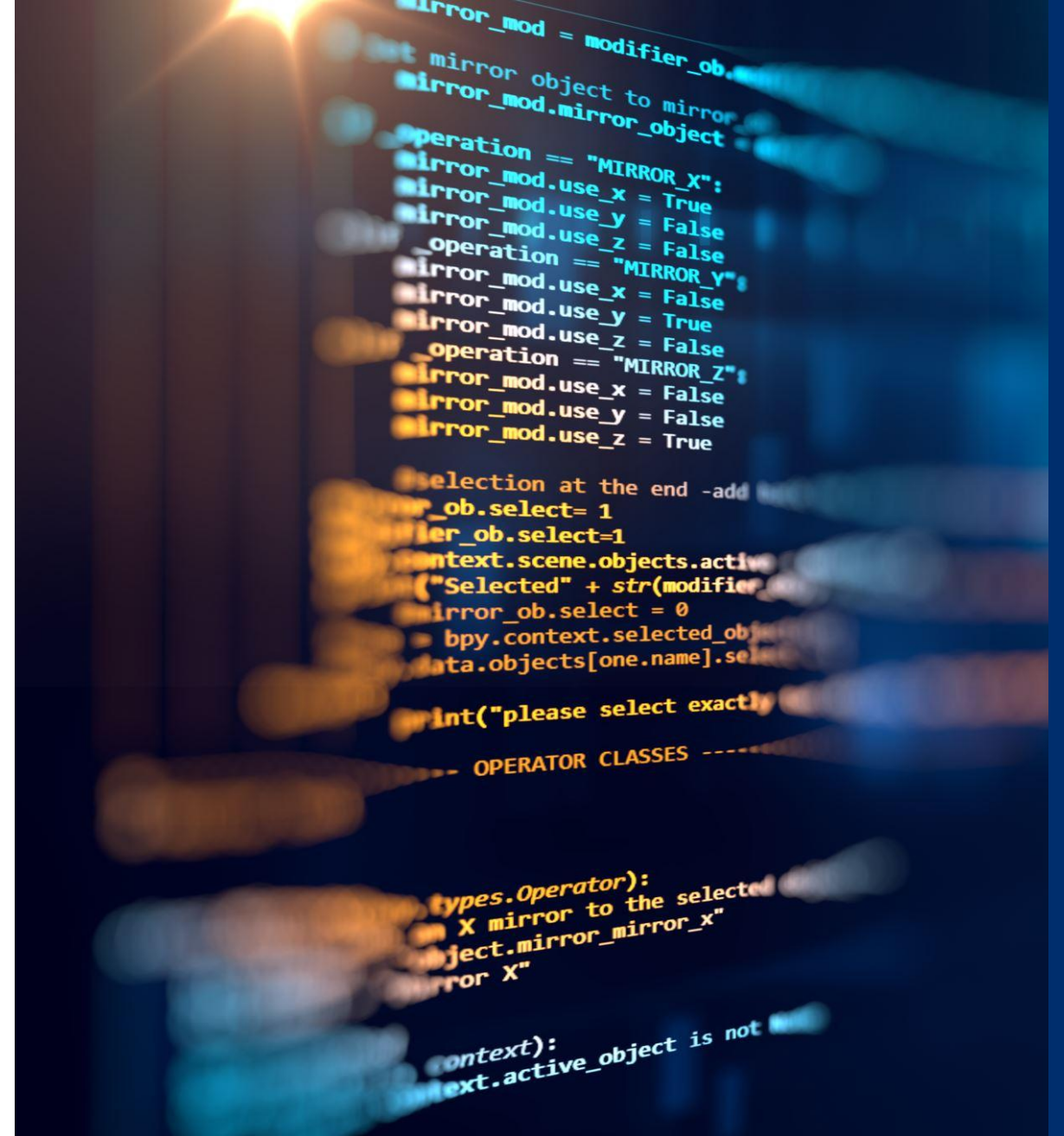
Outlook



Varieties Open Source Projects & Business Models

Open-Source Software Evaluation

- Of course: features & functions
- Project community health
- Open-source license flavor
e.g. GPL, Apache, BSD, ...
- Maturity & persistence
- Contribution culture & oversight
- Code quality & oversight
- Longevity & persistence



Four Open-Source Support Models

Community Only

- Participate in projects
- Train own staff

Independent Open-Source Supporters

- Freelance specialists
- General support companies

Commercially Backed Open Source

- Utilize open-source project
- Contract related company for support
- Struggles community-based features

Commercialized Open-Source

- Utilize open-source project
- Subscribe complete support

Important Dynamics!

- Organization
 - Team
 - License
 - Code
 - Owner
-
- Code remains free, but big-tech money buys staff developing, contributing and supporting
 - Control of direction

DuckDB: Amazon.com kauft Duck Labs

Das Datenwerkzeug DuckDB ist Open Source. Treibende Kraft ist eine kleine niederländische Firma. Sie gehört bald Amazon.com.

 [heise.de bei Google bevorzugen](#)



19



(Bild: Dwimhrni / Shutterstock.com)

26.08.2026, 23:29 Uhr | Lesezeit: 2 Min. | [ix Magazin](#)

Von [Daniel AJ Sokolov](#)

Amazon.com übernimmt die niederländische Firma Duck Labs. Sie ist die treibende Kraft hinter dem Datenwerkzeug DuckDB, das sich ursprünglich als [effiziente relationale SQL-Datenbank für Datenanalysen](#) einen Namen gemacht hat. DuckDB [+](#) samt Duck Lake und Quack selbst soll als Open-Source-Projekt mit MIT-Lizenz unter Führung der weiterhin unabhängigen DuckDB Stiftung erhalten bleiben.

Operational Aspects

- Staff knowledge & acceptance
- Training resources
- Community & consulting resources
- Monitoring integration
- API options & formats
- Integration
- Update & distribution availability



Projects & Products

The Status Quo

Core Infrastructure

TrueNAS
OPEN ENTERPRISE STORAGE

open-e

PROXMOX

ANSIBLE

CONDUCTOR

Python

Tux penguin

SONiC

icinga

docker

Elephant

freeRADIUS

netbox

Greenbone OpenVAS
Open Vulnerability Assessment Scanner

Operations & Support

B1
SYSTEMS

Grafana

influxdata®

WIREGUARD®
FAST, MODERN, SECURE VPN TUNNEL

KEA

Greenbone OpenVAS
Open Vulnerability Assessment Scanner

Portrait of a man

User Related Systems

3CX

GitLab

Nextcloud

OpenSearch

MINIO

LangChain

KEYCLOAK

Cartoon cat

Some Open-Source Licenses

GPL v3.0 & AGPL 3.0

Strong copyleft – Code must be made available

GPL covers changes operated as a service privately

AGPL has the obligation, for changes offered as service

Covers patent possibilities

Can not be licensed away !

MPL 2.0

Filebased copyleft, only changed files need to be fed back

Covers patent possibilities

Relatively weak copyleft

Complex to track (refactoring, libraries)

Apache 2.0

Permissive license

Changes on code can remain private

Covers patent possibilities and allows proprietary products

Legally detailed and suitable for commercial products

Demanding compliance documentation

MIT

Changes on code can remain private

Allow commercial utilization

Short written and easy to comply

All licenses need persistence of the licensing terms and according information

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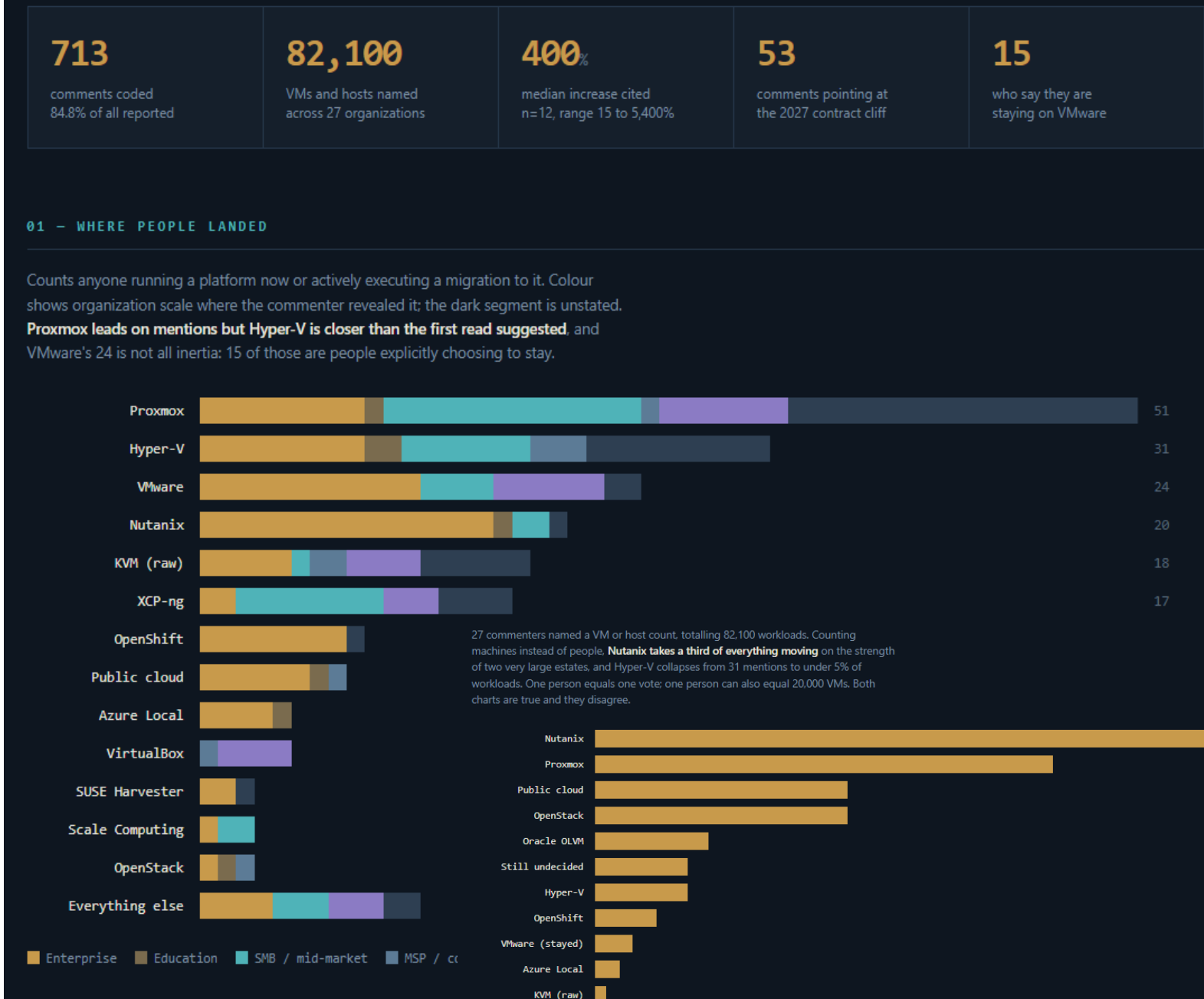
Platforms

Outlook

Shift in Platforms

VM-Ware example

- Enterprise vs. business
- Instance vs. workloads
 - More instances reported than workload details
- 2027 license cliff still ahead
- Commercial solutions on the rise based on open source
- Management platform integration
- Backup solutions



Plattform- Strategies



Central Platform & Automation Stack



Organization

Racks

Devices

Connections

Wireless

IPAM

VPN

Virtualization

Circuits

Power

Provisioning

Customization

Operations

Topology Views

Hardware Lifecycle

Plugins

Admin

NetBox Community v4.3.4
Get Cloud | Get Enterprise

Search...

Organization

Sites26

Tenants23

Contacts72

DCIM

Sites26

Racks81

Device Types303

Devices1224

Cables1433

IPAM

VRFs24

Aggregates0

Prefixes490

IP Ranges147

IP Addresses14834

VLANs388

Circuits

Providers18

Circuits22

Provider Networks0

Virtualization

Clusters35

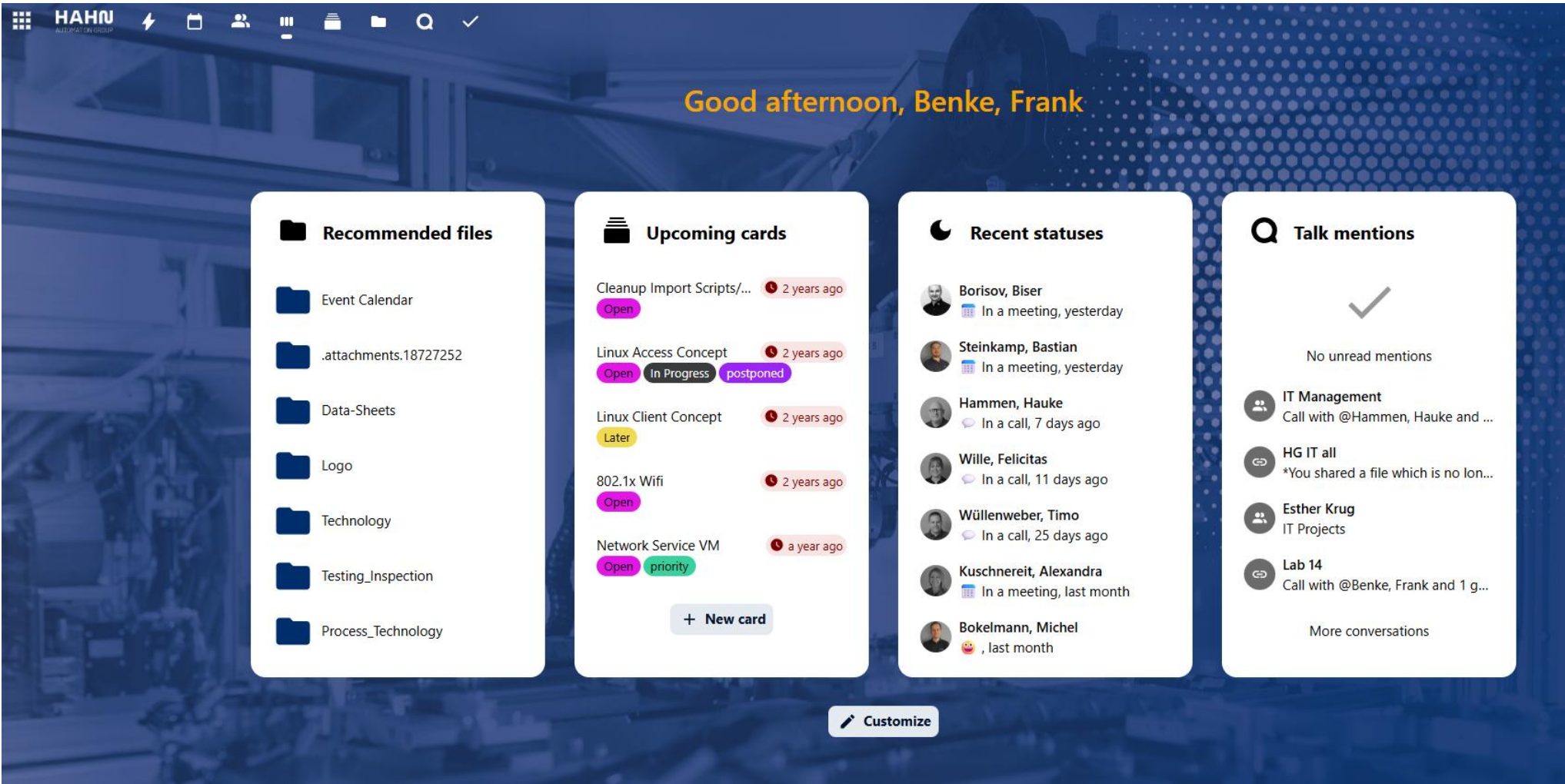
Virtual Machines715

Change Log

TIME ^	USERNAME	FULL NAME	ACTION	TYPE	OBJECT	REQUEST ID
2025-09-24 09:18	s.zimmermann	Sascha Zimmermann	Updated	Device	DERHAssemblyHall05-01 (13518)	6ed34e65-b719-4a2e-9bff-f27cc93a3b48
2025-09-24 09:18	s.zimmermann	Sascha Zimmermann	Updated	Device	DERHStock02 (16368)	58f0c3c2-a0bd-4292-8cdf-1ec90dd1e6a3
2025-09-24 08:58	b.heitmann	Bastian Heitmann	Updated	Virtual Machine	svrh1gwcon03p	1030cb12-8978-438d-97b5-6f1e148c8a20
2025-09-24 08:57	b.heitmann	Bastian Heitmann	Updated	Virtual Machine	svrh1gwcon02p	e32e72f9-fed9-4994-9689-0658a6a6fd2e
2025-09-24 08:46	t.wuellenweber	Timo Wuellenweber	Updated	IP Address	45.146.84.28/24	8ddf9f10-ab1d-46b5-8a2e-f7d876fd7d8b
2025-09-24 08:45	t.wuellenweber	Timo Wuellenweber	Updated	IP Address	45.146.84.13/24	45981813-04a4-47d9-b1fb-75b8ca034c20
2025-09-24 08:45	t.wuellenweber	Timo Wuellenweber	Updated	Virtual Machine	svrh1gwcon01p	0932a2f4-411a-4c99-85cf-7b2eb86d8ee3
2025-09-24 08:43	t.wuellenweber	Timo Wuellenweber	Created	Tag	firewallobjecttag-gwcon	193dbb7a-56e0-49d6-9a1f-9b4b342112cb



Central Collaboration Platform



Private Compliant AI Platform

My Models

Models DirectoryC:\Users\Frank\.cache\lm-studio\models...

Filter by: LLMsText EmbeddingView All

Filter models... (Ctrl + F)

Arch	Params	Publisher	LLM	Quant	Size	Date Modified	Actions
llama	8x3.6B	DavidAU	llama-3.2-8x3b-moe-dark-champion-instruct-uncensored-abliterated-18.4b	Q4_K_S	10.66 GB	today	@ ...
qwen3v1	8B	qwen	qwen/qwen3-v1-8b	Q4_K_M	6.19 GB	today	@ ...
llama	3B	lmstudio-community	llama-3.2-3b-instruct	Q4_K_M	2.02 GB	today	@ ...
gemma	2B	lmstudio-ai	gemma-2b-it	Q8_0	2.67 GB	493 days ago	@ ...
			meta-llama-3-8b-instruct	Q4_K_M	4.92 GB	521 days ago	@ ...

Downloads

Filter...

Completed

DavidAU : Llama 3.2 8X3B MoE Dark Champion Instruct Uncensored Abliterated 18.4B GGUF Q4_K_S
Download Completed 10.66 GB
Reveal in File ExplorerLoad Model

MODEL qwen/qwen3-v1-8b
Download Completed 6.19 GB
Reveal in File ExplorerLoad Model

lmstudio-community : Llama 3.2 3B Instruct GGUF Q4_K_M
Download Completed 2.02 GB
Reveal in File ExplorerLoad Model

Open Downloads DirectoryClear History

Download Completed!

lmstudio-community/Llama-3.2-3B-Instruct-GGUF/Llama-3.2-3B-Instruct-Q4_K_M.gguf has finished downloading.
Load Model

Download Completed!

qwen/qwen3-v1-8b has finished downloading.
Load Model

Download Completed!

DavidAU/Llama-3.2-8X3B-MOE-Dark-Champion-Instruct-uncensored-abliterated-18.4B-GGUF/L3.2-8X3B-MOE-Dark-Champion-Inst-18.4B-uncen-ablit_D_AU-Q4_k_s.gguf has finished downloading.
Load Model

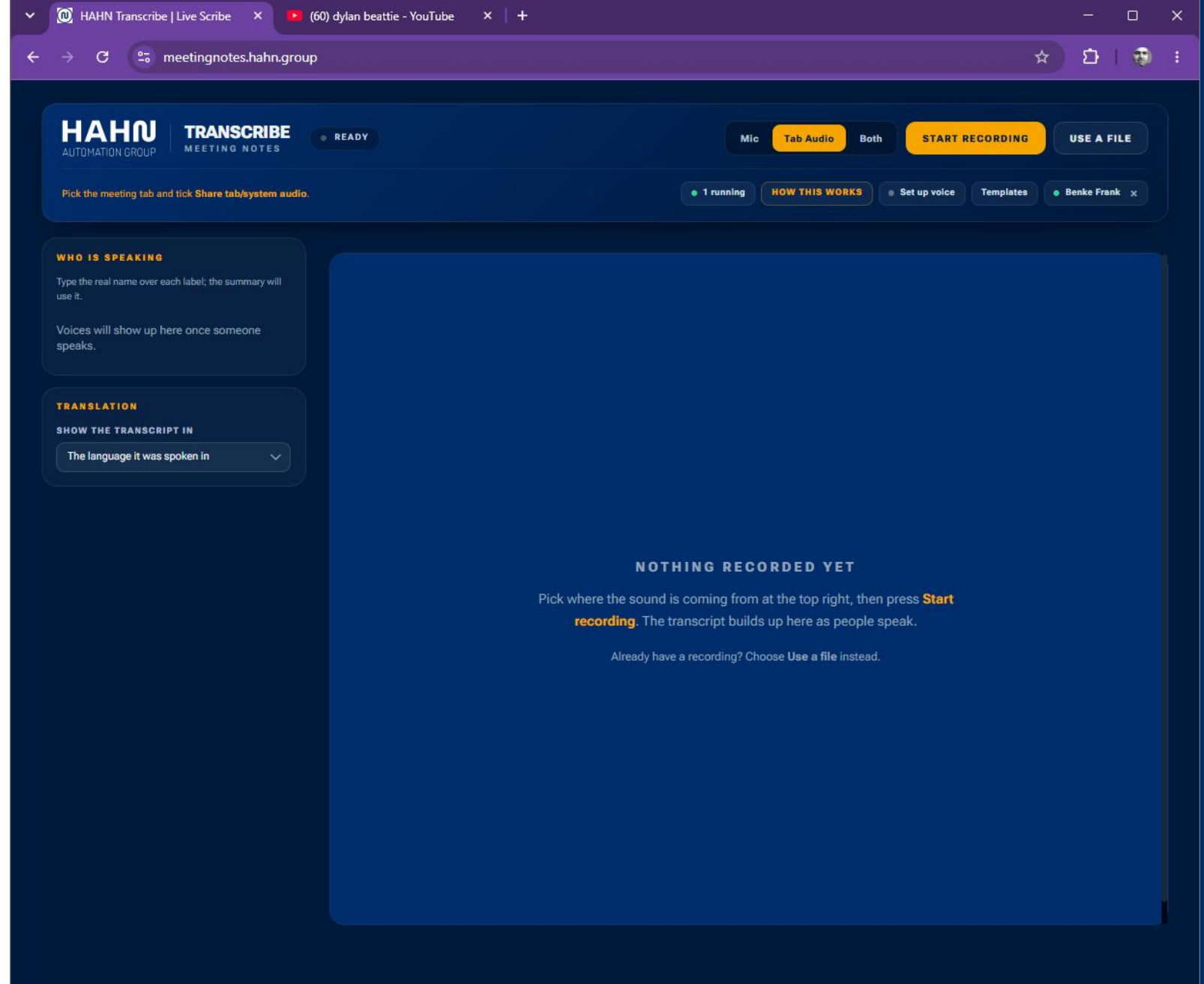
You have 5 local models, taking up 26.46 GB of disk space.

LM Studio 0.3.31 (Build 7)UserPower UserDeveloperRAM: 0 GB | CPU: 0.00 %



Private Compliant AI Meeting Assistance

- Platform Agnostic
- Speaker Identification
- Transcribe
- Translate
- Summarize
- Customize



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Recommendations

- Infrastructure first strategy
 - Storage has often high leverage
 - Monitoring has high maturity
- GPL first strategy
- Start with commercial backed options
- Search for independent support
- Think big
- Train staff
- Automate





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