

Felhős adatplatformok Költség-haszon-megtérülés

Gollnhofer Gábor @ Meta Consulting Kft.

Meta Consulting Kft.

- 2002-ben alakult, magyar tulajdonú vállalat

Tevékenységünk

- DW & BI, metaadat management, data governance
- Rendszertervezés, fejlesztés, tanácsadás, oktatás

Ügyfeleink

- Bank, biztosító, FMCG, távközlés, média, felsőoktatás, államigazgatás, stb.
- Közép-kelet európai régióban (HU, DE, CZ, PL, SK, RO, MNE) + UK/USA
- 60+ ügyfél, 12 ország, 130+ projekt

A Snowflake, WhereScape és Fivetran magyar partnere

AZ ELŐADÓRÓL...

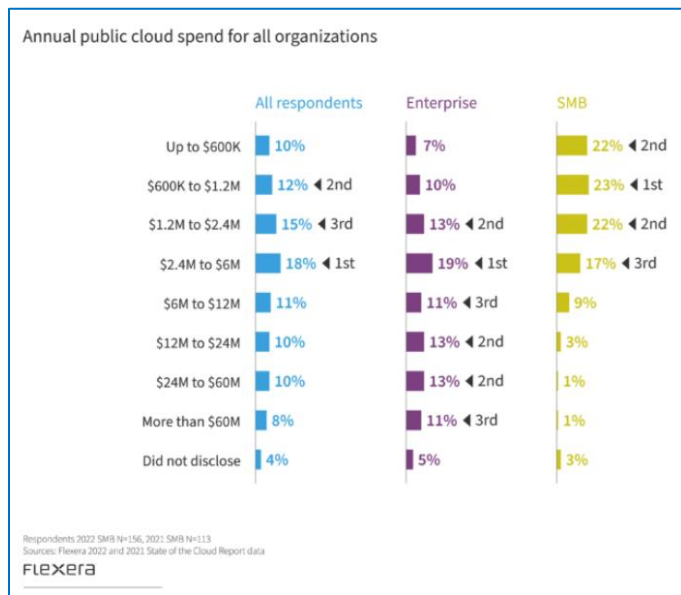
Gollnhofer Gábor

- 1992 óta nagyvállalati adatbáziskezelés
- 1996 óta adattárház és BI jellegű projektek
- adatmodellezés, modellezési tanácsadás, oktatás
- 3NF, dimenziós és Data Vault rendszerek tervezése
- iparági tapasztalatok: államigazgatás, bank, biztosító, FMCG, felsőoktatás, távközlés, stb.
- technológiák: Snowflake, Oracle, Microsoft, Wherescape, stb.



„Időjárás előrejelzés” - Felhősödés

Néhány adat a felhő alapú megoldások elterjedéséről



„Időjárás előrejelzés” - Felhősödés

Néhány adat a felhő alapú megoldások elterjedéséről

9. Cost-cutting tops the list of the reasons why enterprises choose to adopt the cloud.

(Source: Datometry)

A survey among 166 IT leaders shows there are various reasons why enterprises might move their computing to the cloud. The top one, with 61%, is the companies' cost-cutting initiative.

Second comes the desire for new features and capabilities with 57%.

For 30% of enterprises, their current warehouses filling up has pushed them toward adopting the cloud.

23% of enterprises simply cite "executive mandate" as a reason, and only 12% of them have cited any other reason at all.



Respondents 2022 SMR N=156, 2021 SMR N=113
Sources: Flexera 2022 and 2021 State of the Cloud Report data

FLEXERA

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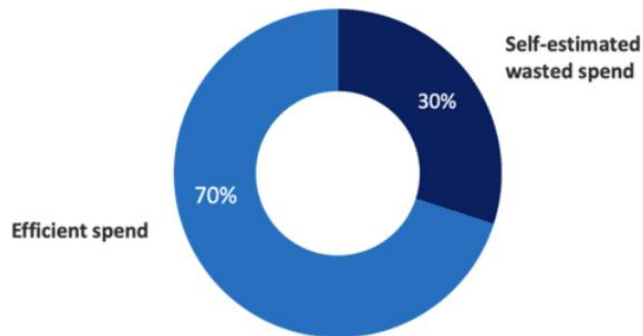


Respondents 2022 SMB N=156, 2021 SMB N=113
Sources: Flexera 2022 and 2021 State of the Cloud Report data

FLEXERA

Percentage of Cloud Spend Wasted

% waste of all respondents



N=750

Source: 2021 Flexera State of the Cloud Report

„Időjárás előrejelzés” - Felhősödés

Néhány adat a felhő alapú megoldások elterjedéséről

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For 30% of enterprises, their current warehouses filling up has pushed them to the cloud.

23% of enterprises simply cite "executive mandate" as a reason, and 10% cite other reasons.



Respondents: 2022 SMB N=156, 2021 SMB N=113
Sources: Flexera 2022 and 2021 State of the Cloud Report data
FLEXERA

24. Cloud Adoption in the EU is at 46% in 2022.

(Source: Eurostat)

EU as a whole is not yet a fan of cloud adoption. Only 42% of EU enterprises used cloud computing in 2022 – mostly for email hosting and file storage. However, this is a big increase from the 2020 figure of 36%. EU companies find the cloud a good place to run financial, accounting, and CRM software.

In the EU, public cloud services get more attention (18%) than their private counterparts (11%). 68% of cloud users used these services for storing files, 48% find them a good place to host their database, while 53% reported using it for office software.

These numbers varied significantly across member-states. In Finland, Denmark, the Netherlands, Ireland, the United Kingdom, and Belgium at least 40% of enterprises used cloud computing. Sweden has the highest figure at 75%. On the other hand, only less than 13% of businesses relied on cloud services in Bulgaria and Romania.

N=750

Source: 2021 Flexera State of the Cloud Report

„Időjárás előrejelzés” - Felhősödés

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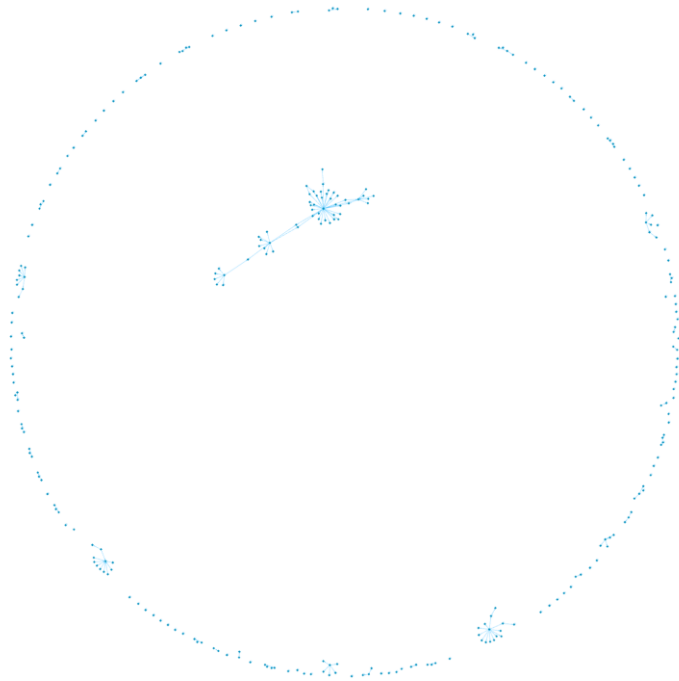
... member-states. In Finland, Denmark, the Netherlands, Ireland, the 0% of enterprises used cloud computing. Sweden has the highest figure in 13% of businesses relied on cloud services in Bulgaria and Romania.

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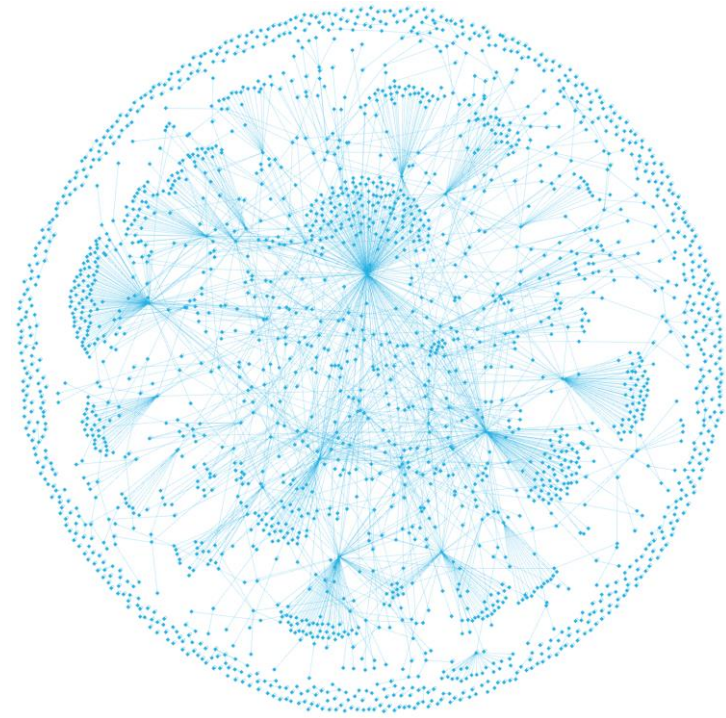
... > HÍREK - ÚJDONSÁGOK > MEGJELENT AZ ÚJ FELHŐ AJÁNLÁS

A mai napon közzétételre került az [MNB honlapján](#) a közösségi és publikus felhőszolgáltatások igénybevételéről szóló [4/2019. \(IV.1\). MNB ajánlás](#), melynek célja, hogy a pénzügyi közvetítőrendszer szereplői számára gyakorlati útmutatást adjon a közösségi és publikus felhőszolgáltatások igénybevételéből eredő kockázatok kezeléséhez, valamint a vonatkozó nemzeti és európai uniós jogszabályokban, egyéb szabályozó eszközökben foglalt rendelkezések egységes alkalmazásához. Az ajánlás 2019. május 1-től alkalmazandó. Ettől az időponttól hatályát veszti a korábbi, 2/2017. MNB ajánlás.

Snowflake Data Cloud növekedés



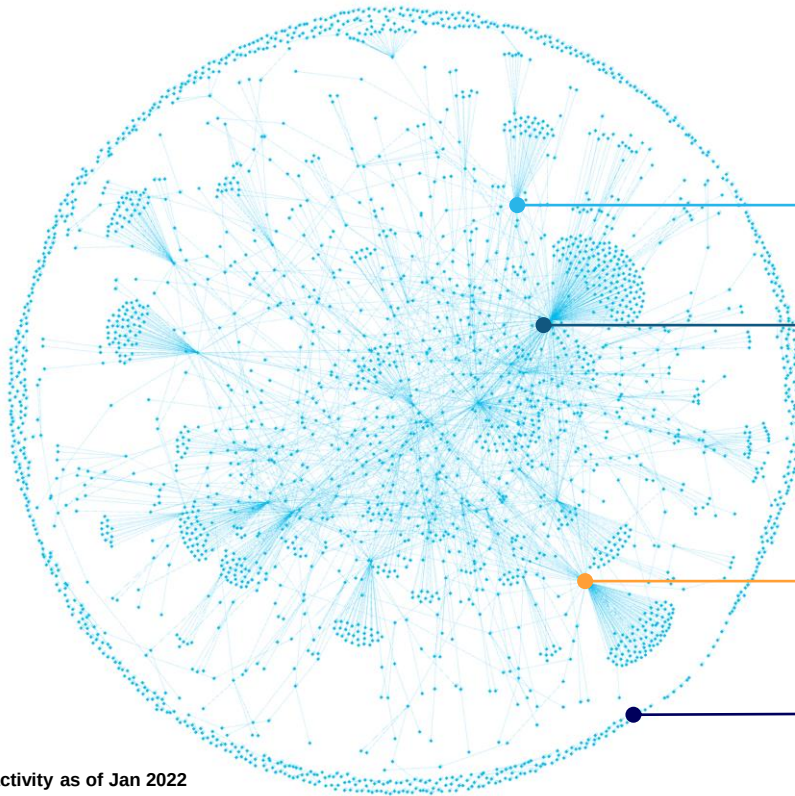
April 2020



Oct 2021

A Snowflake Data Cloud jelenleg

Több ezer szervezet osztja meg adatait az ökoszisztémájával



A software company shares terabytes of data with hundreds of customers

COVID-19 data is available live on Snowflake Data Marketplace from a US State, ECDC, JHU and other organizations

Today's financial data is accessible immediately without data pipelines

Thousands of companies share data with suppliers, partners, or other business units

* Visualization based on actual Data Cloud sharing activity as of Jan 2022

PRODUCT REVENUE ¹



\$359.6M

+ 102% YoY Growth



\$1,140.5M

+ 106% YoY Growth

NET REVENUE RETENTION RATE ²



178%

TOTAL CUSTOMERS ²



5,944

+ 44% YoY Growth

\$1M CUSTOMERS ²



184

+ 139% YoY Growth
Customers with Trailing 12-Month
Product Revenue Greater than \$1M

ENTERPRISE MOMENTUM

**FORTUNE 500
CUSTOMERS ³**


241

+ 24% YoY Growth

**FORBES
GLOBAL 2000
CUSTOMERS ⁴**


488

+ 21% YoY Growth

DATA MARKETPLACE LISTINGS ⁵



1,117

Total Listings
+ 21% QoQ Growth

CUSTOMER SATISFACTION

**DRESNER
CUSTOMER
SATISFACTION
SCORE ⁶**


100%

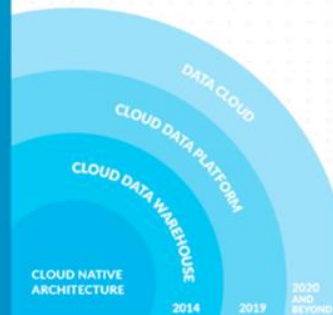
Of Customers
Recommend Snowflake for
Fifth Consecutive Year

**NET PROMOTER
SCORE (NPS) ⁷**


68

Most Customers Would
Recommend Snowflake
to a Friend or Colleague

SNOWFLAKE DATA CLOUD



1. For the three and twelve months ended January 31, 2022, respectively. 2. As of January 31, 2022. Please see our Q4 FY22 earnings press release for definitions of net revenue retention rate, total customers, and customers with trailing 12-month product revenue greater than \$1 million. 3. As of January 31, 2022. Based on the 2021 Fortune 500 list. Our Fortune 500 customer count is subject to adjustments for annual updates to the Fortune 500 list by Fortune, as well as acquisitions, consolidations, spin-offs, and other market activity with respect to such customers. 4. As of January 31, 2022. Based on the 2021 Forbes Global 2000 list. Our Forbes Global 2000 customer count is subject to adjustments for annual updates to the Global 2000 list by Forbes, as well as acquisitions, consolidations, spin-offs, and other market activity with respect to such customers. 5. As of January 31, 2022. Each live dataset, package of datasets, or data service published by a data provider as a single product offering on Snowflake Data Marketplace is counted as a unique listing. A listing may be available in one or more regions where Snowflake Data Marketplace is available. 6. Dresner Advisory Services: 2022 Wisdom of Crowds Analytical Data Infrastructure (ADI) Market Study, January 2022. 7. As of July 2021.

PRODUCT REVENUE ¹



\$394.4M

+ 84% YoY Growth

NET REVENUE RETENTION RATE ²



174%

TOTAL CUSTOMERS ²



6,322

+ 40% YoY Growth

\$1M CUSTOMERS ²



206

+ 98% YoY Growth
Customers with Trailing 12-Month
Product Revenue Greater than \$1M

FORBES GLOBAL 2000 CUSTOMERS ³



506

+ 22% YoY Growth

SNOWFLAKE MARKETPLACE LISTINGS ⁴



1,358

Total Listings
+ 22% QoQ Growth

CUSTOMER SATISFACTION

DRESNER CUSTOMER SATISFACTION SCORE ⁵



100%

Of Customers Recommend
Snowflake for Fifth
Consecutive Year

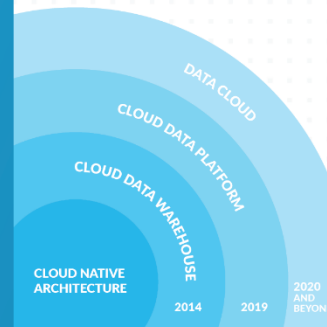
NET PROMOTER SCORE (NPS) ⁶



68

Most Customers Would
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to a Friend or Colleague

SNOWFLAKE DATA CLOUD



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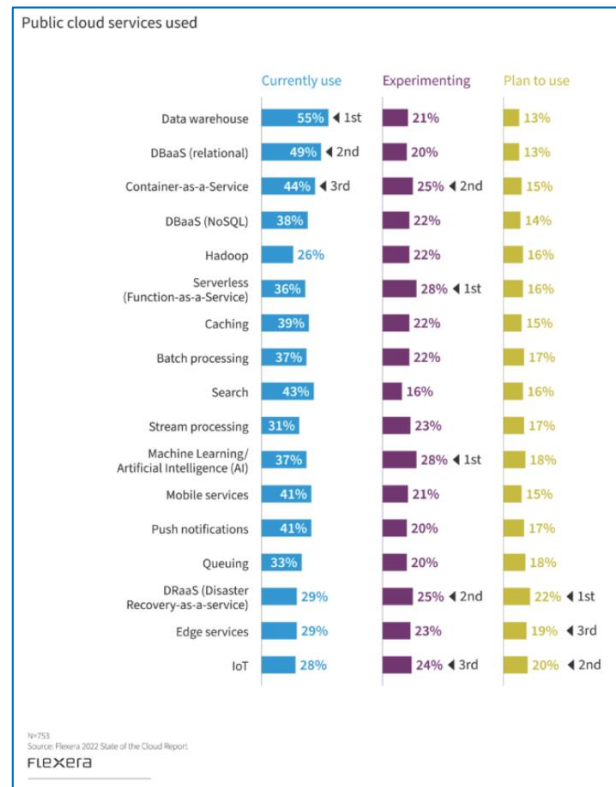
Mire használják?

Általában

- DW és adatbáziskezelés
- Container (infrastruktúra)
- Üzleti alkalmazások

Nálunk

- Irodai alkalmazások, levelezés
- Vállalati alkalmazások (pl. CRM)
- Ügyfél önkiszolgáló alkalmazások
- Fejlesztői környezetek, Backup, stb.



Miért?

Gazdasági okok

Technológiai okok

„Divat”

AZ ON-PREMISE MEGOLDÁS...

Beruházás igényes

- CAPEX

Drágán és lassan bővíthető

- infrastruktúra és licencek költsége
- beszerzés átfutási idő, összetett feltételek (több szállító)

Rosszul méretezhető

- a csúcsterhelésre kell tervezni és többnyire kihasználatlan

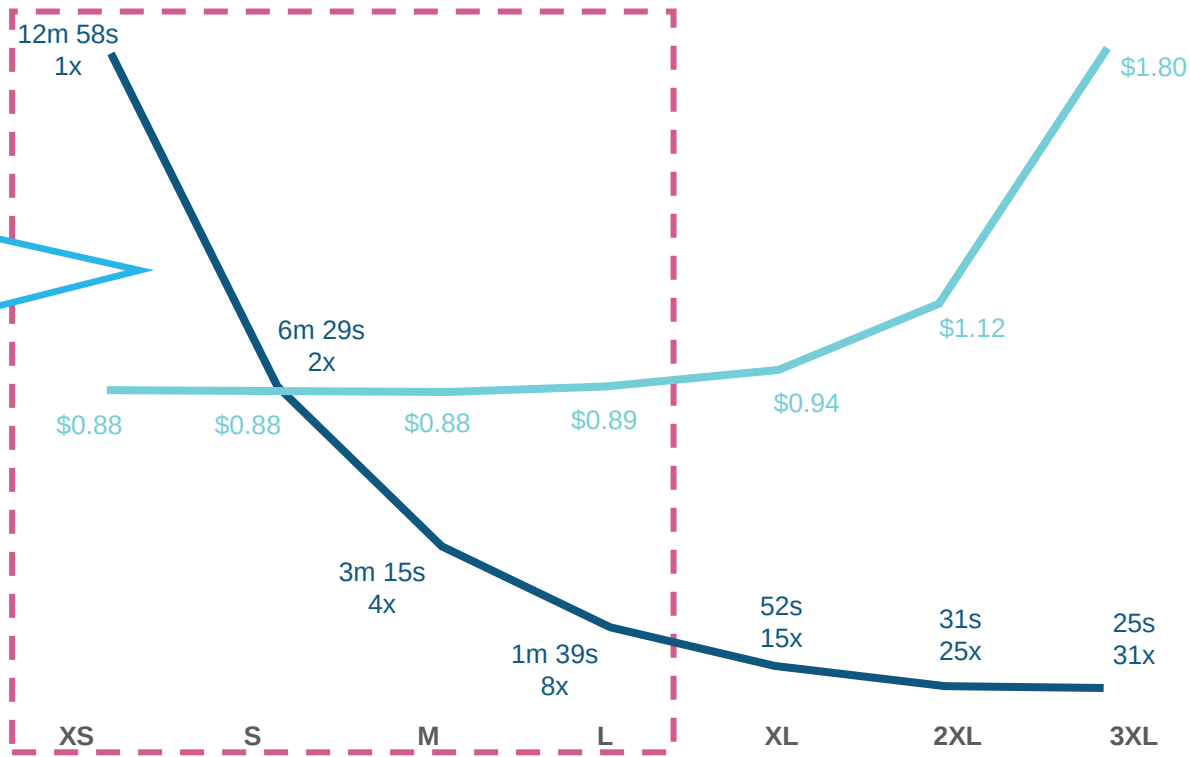
SCALE UP – 1 MRD REKORD BETÖLTÉSE

A szerverek számának megduplázása felére csökkenti a futási időt

de szerverenként és számítási másodpercekért kell fizetni

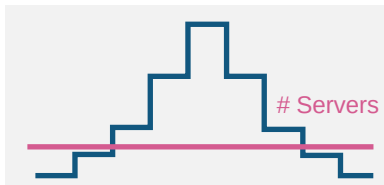
tehát a válaszokat
8x gyorsabban
kapjuk meg
ugyanolyan
költségen

— Költség
— Másodperc

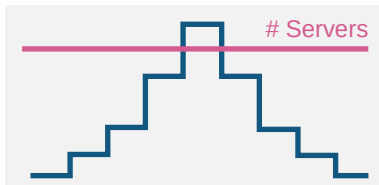


SCALE OUT - MULTI-CLUSTER WAREHOUSE

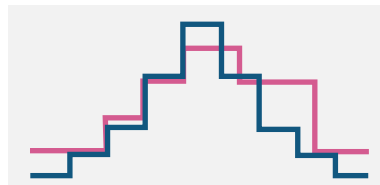
Medium - 1 Cluster



X-Large - 1 Cluster

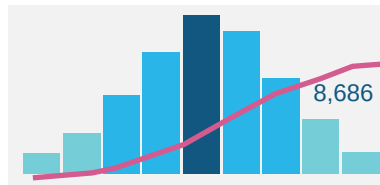
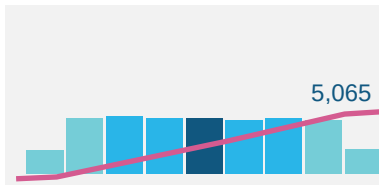
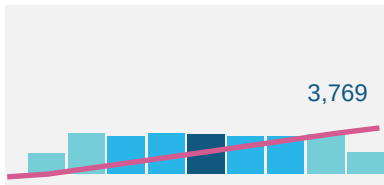


Medium – 1-4 Multi-Cluster

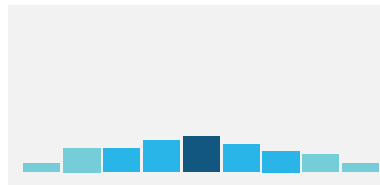
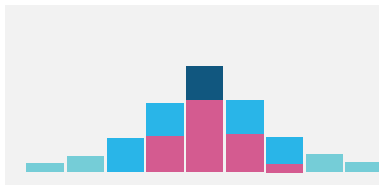
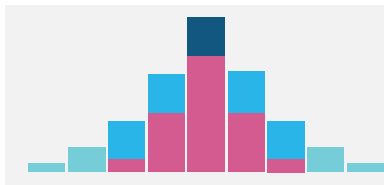


Szerverek /
Felhasználók

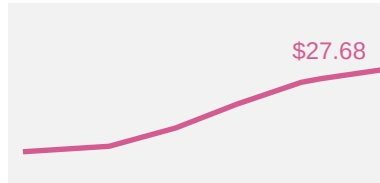
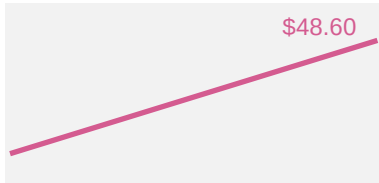
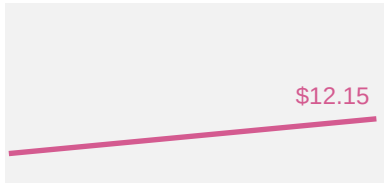
Áteresztőképesség
(qry/sec)



Válasz idő/
Sorban állási idő



Költség (\$)



Nincs alá vagy túl
tervezve – az
erőforrások
igazodnak az
igényekhez



A legnagyobb
áteresztőképességet
biztosítja



A legjobb válaszidőt
biztosítja a csúcs
időben is



Leginkább
költséghatékony



A DATA CLOUD ELEMENT



PLATFORM
+
TARTALOM



Kockázatok

Adatbiztonság

Rendelkezésre állás

Vendor „lock-in”

Kulturális kérdések

Költségek tervezett <> tényleges

Költségek

Egyszeri

- Felmérés, tervezés
- Implementáció, migráció
- Betanulás

Folyamatos

- Használat
- Üzemeltetés

Előnyök

Számszerűsíthető

- Költség csökkenés
 - Infrastruktúra
 - Üzemeltetés
- Bevétel, nyereség
 - Jobb time-to-market
 - Gyorsabb, hatékonyabb döntéstámogatás
 - Profit növekedés

Nem számszerűsíthető

- „Felhasználói”
 - Magasabb rendelkezésre állás
 - Jobb teljesítmény
- „Technikai”
 - Rugalmasság
 - Hatékonyabb „self-service”

Példa költség-haszon elemzés

Költségek

Total Costs							
REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Ftr	Due diligence, implementation, deployment, and ongoing management	\$686,400	\$686,400	\$343,200	\$343,200	\$2,059,200	\$1,851,888
Gtr	Snowflake costs	\$0	\$302,500	\$453,750	\$680,625	\$1,436,875	\$1,161,364
	Total costs (risk-adjusted)	\$686,400	\$988,900	\$796,950	\$1,023,825	\$3,496,075	\$3,013,252

Forrás:

Forrester: The Total Economic Impact™ Of Snowflake's Cloud Data Platform

<https://www.snowflake.com/resource/2020-forrester-tei-report/>

Példa költség-haszon elemzés

Eredmények

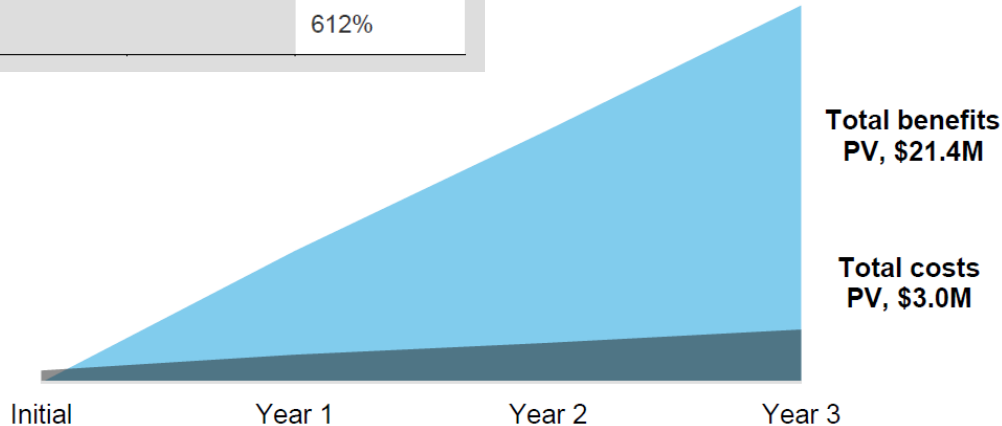
Total Benefits						
REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Accelerated time-to-market	\$4,680,000	\$480,519	\$480,519	\$5,641,038	\$5,012,690
Btr	Increased profit	\$1,275,000	\$2,422,500	\$2,167,500	\$5,865,000	\$4,789,632
Ctr	Improved decision-making support from faster access to data	\$0	\$2,160,000	\$2,520,000	\$4,680,000	\$3,678,437
Dtr	Simplified data operations	\$685,425	\$861,413	\$1,037,400	\$2,584,238	\$2,114,439
Etr	Infrastructure and database management savings	\$1,593,720	\$2,390,580	\$3,230,190	\$7,214,490	\$5,851,412
	Total benefits (risk-adjusted)	\$8,234,145	\$8,315,012	\$9,435,609	\$25,984,766	\$21,446,610

Példa költség-haszon elemzés

Total + cash-flow

Cash Flow Table (Risk-Adjusted)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$686,400)	(\$988,900)	(\$796,950)	(\$1,023,825)	(\$3,496,075)	(\$3,013,252)
Total benefits	\$0	\$8,234,145	\$8,315,012	\$9,435,609	\$25,984,766	\$21,446,610
Net benefits	(\$686,400)	\$7,245,245	\$7,518,062	\$8,411,784	\$22,488,691	\$18,433,358
ROI						612%



ÜZLETI EREDMÉNY A SNOWFLAKE-TŐL

FORRESTER®



612% Return on Investment



50% Faster Time to Roll Out the Business Product



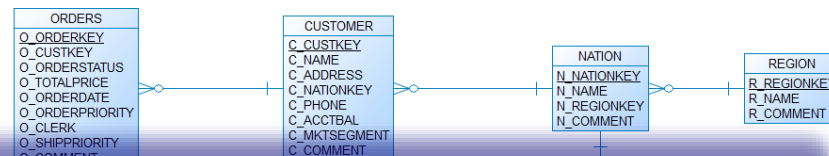
75% Reduction in Effort for the IT Support Team



DEMO

TPC-H benchmark adatok

- Legnagyobb tábla 6mrd



today

Eric 6:48 PM

Thank you @Attila Berecz for your brilliant suggestion to use SF Time Travel. !!! 🎉

- Teszt adatbázis létrehozása
- Teszt lekérdezések
- „Takarítás”

L_RECEIPTDATE
L_SHIPINSTRUCT
L_SHIPMODE
L_COMMENT

PART

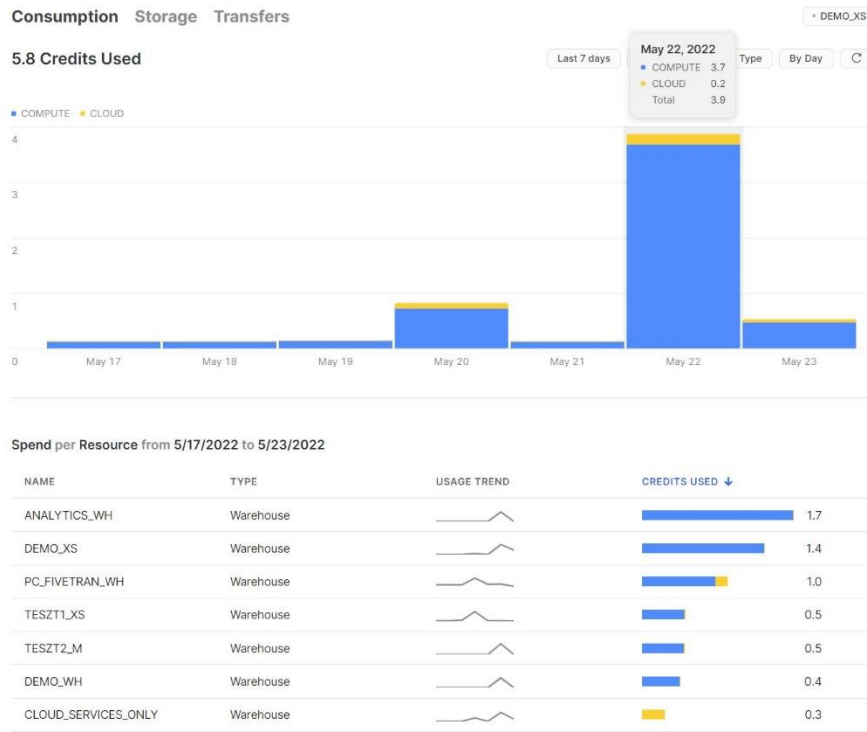
- P_PARTKEY
- P_NAME
- P_MFGR
- P_BRAND
- P_TYPE
- P_SIZE
- P_CONTAINER
- P_RETAILPRICE
- P_COMMENT

DEMO

Költségek

Feldolgozások

- Induló adatfeltöltés
 - SF „Warehouse”
 - ANALYTICS_WH és TESZT2_M
 - 1.7 és 0.5 credit
- Teszt demo
 - TESZT1_XS
 - 0.5 credit
 - Összes teszt futás! 5 db

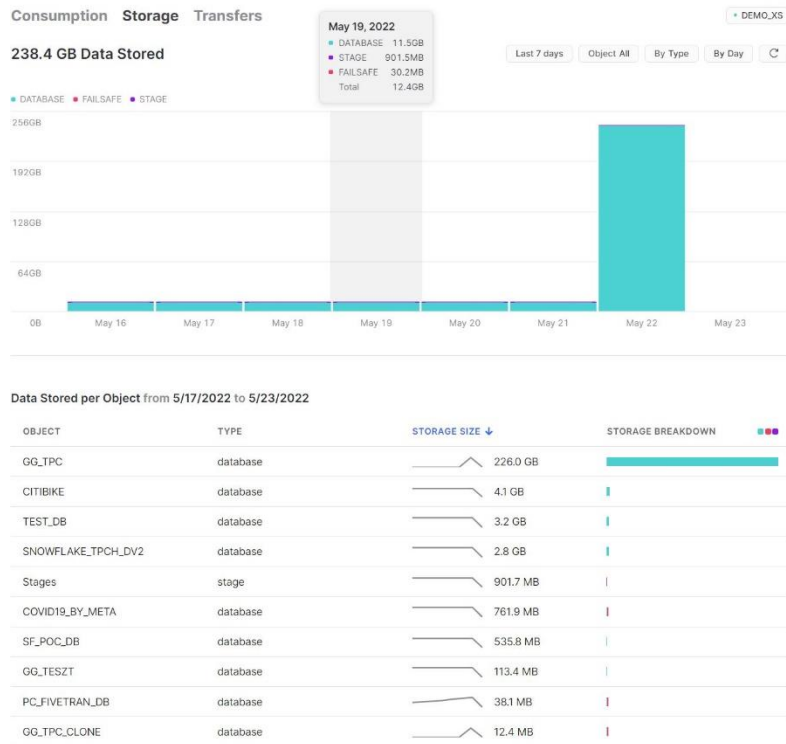


DEMO

Költségek

Adatbázis

- „Éles” adatbázis
 - GG_TPC
 - 226 GB tömörítve!
- Teszt adatbázis
 - GG_TPC_CLONE
 - 12.4MB !
 - Csak a teszt változások



DEMO

Költségek

Snowflake listaáron

- Enterprise verzió
- Azure cloud, EU NL
- Költségek
- Induló adat feltöltés:
 - $1.7 + 0.5 \text{ credit} * €3.25 = €7.15$
 - $0.226 \text{ TB} * €33.33/\text{hó} = €7.5/\text{hó}$
- Teszt futások:
 - $0.5 \text{ credit} * €3.25 = €1.625$
 - $12.4 \text{ MB}/1\text{m} * €33.33/\text{hó} = €0.004$

The screenshot displays the Snowflake pricing interface. At the top, there are dropdown menus for 'Microsoft Azure', 'West Europe (Netherlands)', and 'EUR'. Below these, three main pricing cards are shown: 'STANDARD', 'ENTERPRISE', and 'BUSINESS CRITICAL'. Each card lists features and a 'cost per credit' value. At the bottom, there are two additional cards for 'ON-DEMAND STORAGE' and 'CAPACITY STORAGE'.

Edition	Features	Cost per credit
STANDARD	Complete SQL data warehouse Secure Data Sharing across regions / clouds Premier Support 24 x 365 1 day of time travel Always-on enterprise grade encryption in transit and at rest Customer-dedicated virtual warehouses Federated authentication Database replication Snowsight Create your own Data Exchange Data Marketplace access	€2.17
ENTERPRISE	Standard + Multi-cluster warehouse Up to 90 days of time travel Annual rekeying of all encrypted data Materialized views Search Optimization Service Dynamic Data Masking	€3.25
BUSINESS CRITICAL	Enterprise + HIPAA support PCI compliance Tri-Secret Secure using customer-managed keys Database failover and failback for business continuity Azure PrivateLink support	€4.33

Storage Type	Cost	Learn More
ON-DEMAND STORAGE Pay for usage month to month.	€33.33 per TB / per month	LEARN MORE
CAPACITY STORAGE Pay for usage up front.	€19.17 per TB / per month	LEARN MORE

KÉRDÉSEK & VÁLASZOK



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Olvasnivalók, források

Cloud adoption:

- [Gartner Forecasts Worldwide Public Cloud End-User Spending to Reach Nearly \\$500 Billion in 2022](#)
- [Cloud Adoption Statistics for 2022](#)
- [The Ultimate List of Cloud Adoption Statistics \(2022\)](#)
- [Top 50 Cloud Computing Statistics And Trends For 2022](#)
- [Cloud Computing Trends: Flexera 2022 State of the Cloud Report](#)

Költség-haszon elemzés:

- [Forrester: The Total Economic Impact™ Of Snowflake's Cloud Data Platform](#)