

Network Accessible Storage

An opportunity to reinvent the concept

A Landscape Study

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Executive Summary

Network accessible storage (NAS) devices are currently sold by a variety of vendors. A NAS is essentially a hard drive and computer whose sole purpose is to provide storage for a local network. These products solve a relatively niche problem today, essentially transport of large files and primitive backup functionality. Whereas they are sold by many vendors¹, the products themselves are not well differentiated. The product itself currently has a market size of around \$14.74B with an expected growth towards \$54.57B² in 2027. We believe there is an opportunity to blow this market up by creating smarter functionality in the product,

We believe the market is poised for hyper growth with a strong opportunity for true product differentiation by becoming the center of the Personal Cloud movement. This is functionality that allows customers to essentially truly own their data and share it without a large technology company. The estimated market size for Personal Cloud functionality (including online and hardware based) is around \$26.8B with expected growth towards \$161.39B in 2027.

A vendor that can leverage this has a real opportunity to take home the personal cloud market which currently has very small niche players.³

Introduction: Where the NAS market is today

The current NAS marketplace is ripe for disruption. Products today are extremely undifferentiated (the number one reason consumers pick a product is aesthetics, which can be translated to “black box” vs “gray box” vs “white box”). They also look for brand recognition and perceived “reliability”⁴. Review sites reference features, but they are rarely used in practice or mentioned by consumers on main stream shopping sites.⁵

¹References

Some players in this space include Dell, NetApp, HP, Western Digital, Netgear, Seagate, Buffalo Americas, Drobo, IBM, Hitachi, Synology, QNAP, ASUSTOR and others.

² <https://www.fortunebusinessinsights.com/industry-reports/network-attached-storage-market-100505>

³ Nextcloud (<https://nextcloud.com>), an opensource personal cloud solution, is the largest niche player. Unfortunately, it is difficult for a mainstream consumer to install and maintain.

⁴ Reviews of top selling NAS's sold on Best Buy reference “Set up”, “File storage” and “Ease of Use”, “Speed”, “Compatibility” and “Syncing”.

⁵ Sites like the New York Times’ network addressed storage review references features, speed and reliability <https://www.nytimes.com/wirecutter/reviews/best-network-attached-storage/>

“How Much is Your Data Worth? The Complete Breakdown for 2021”
<https://www.invisibly.com/learn-blog/how-much-is-data-worth>



Some sample NAS devices in the market space

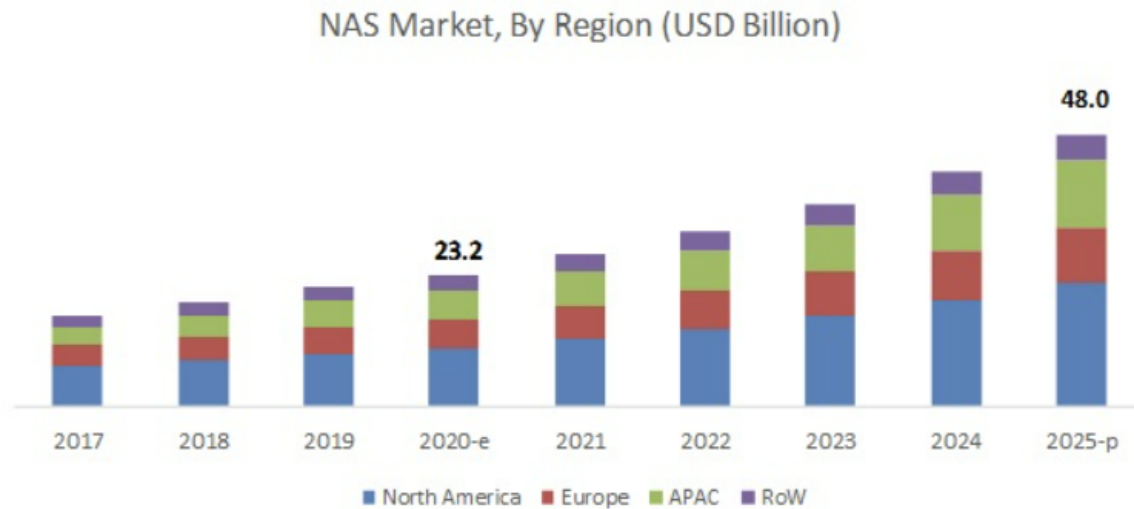
“Personal Cloud Market by Revenue Type (Direct and Indirect), Hosting Type (Service Providers and Consumers), and End user (Individuals and Enterprises): Global Opportunity Analysis and Industry Forecast, 2020–2027”
<https://www.alliedmarketresearch.com/personal-cloud-market>

The product space is very undifferentiated and is a highly competitive space that leans more on brand recognition and physical design. Currently there are over 20 manufacturers that create home or prosumer NAS products.



A crowded, relatively undifferentiated space

With all that said, the NAS market space is expected to grow dramatically over the next five years from 23.2B in 2020 to 48.0B in 2025 estimated. This growth is expected to be driving by high volume digital content creation (particularly around 5G technologies) and is expected to be distributed similarly to how it is distributed today amongst market players.



The Worth of Personal Data

Have you ever wondered how much your data is worth on the dark web or how valuable it will be for companies and fraudsters who may not have your best interest in mind? Everyone of us

uploads a treasure trove of personal data, both knowingly and unknowingly, to our social media accounts, online shopping sites and also search engines that track the users through their proprietary ad targeting algorithms.

Just like every other commodity available out in the market, the “price” or the value of your data, is based on a simple supply and demand and the practicality or the potential it holds to generate future revenue. According to the published article, “How Much is Your Data Worth? The Complete Breakdown for 2021”, the value of your data can be categorized into sex, age, ethnicity and income. The data record type, including your financial records, cryptocurrency account, social media accounts and database dumps are all considered as hot commodities on the dark web.

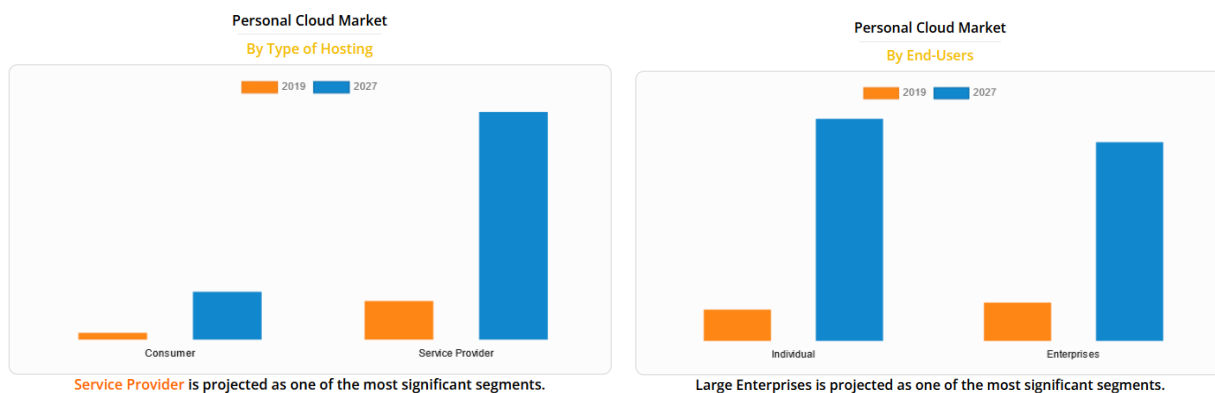
The value of your data also shows a disparity between sex/age/ethnicity/income. The younger 18~24 male with Middle Eastern descent and an average family income of \$120,000 are the most desirable. On the other hand, a hacked and verified financial account (cryptocurrency) can be worth as much as \$610 on the dark web. By comparison, your most intimate and personal health record is only worth \$250.15 on the dark web.

Demographic		Cost for Data Per Person	Percentage of Population
Sex Assignment	Male	\$0.15	48.59%
	Female	\$0.14	51.41%
Age	Age 18-24	\$0.36	11.92%
	Age 55+	\$0.05	32.33%
Ethnicity	Middle Eastern	\$0.62	1.21%
	Hispanic	\$0.01	8.09%
Family Annual Income	\$40,000-\$49,999	\$0.02	4.94%
	\$120,000-\$149,999	\$0.33	1.84%

Record Type	Average Price
Health Care Record	\$250.15
Payment Card Details	\$5.40
Banking Records	\$4.12
Access Credentials	\$0.95
Social Security Number	\$0.53
Credit Record	\$0.31
Basic PII	\$0.03

The Personal Cloud Movement

Given the increase in number of social media sites and the ever increasing appetite for data and content consumption on all available IT devices imaginable, the growth of personal cloud market demonstrated a significant uptick and growth in consumer interest to host their own personal storage with sole control of their own data. While the demand may still lag behind enterprise and service provider market, the personal cloud segment is generating interest among data security conscious consumers.



The personal cloud market size was only valued at \$26.80 billion in 2019. However, according to analyst projection, it is expected to reach \$161.39 billion by 2027 while maintaining a CAGR of 24.6% from 2020 to 2027. This increase in demand can attribute to an increase of tech-savvy population and the popularity and ease-of-use of the cloud-base service model.



The NAS Opportunity

The opportunities around NAS and making it “smart”, easy to use and secure are tremendous. The ability to bake in personalized search engine and ML (Machine Language) auto-classification increase the discoverability and indexing of the data. The smart NAS automatic data backup feature allows the user to back up all their personal data from all IT devices and social media networks and ensures imported data encryption and security are maintained. The ability for smart NAS to act as a media server to both deliver digital contents and to allow remote access and synchronization of stored contents will allow uninterrupted and 24/7 access to user’s digital libraries.

However, the most crucial feature that a smart NAS must be able to convey is the user friendly and intuitive interface. It should be easy to use like your iPhone, and it should be able to predict and to present what the user may want and need under different operating scenarios.

Conclusion

Synology and Qnap have the best application support and user interface available in the market today. The potential to increase the total addressable market (TAM) by making a smart NAS is enormous. Smart NAS should also be considered as a driver for the personal cloud segment. New and smarter features enabled by smart NAS can provide more secure personal data storage and sharing.