

Data centers.

A massive, fast-growing business. One of the ways to invest in property

Part one. Description of business and consumers

There is currently another technological revolution taking place around the world. Artificial intelligence, 5G technology, IoT, and the number of telephone subscribers has exceeded 4 billion, of which 2.5 billion, have smartphones. The amount of video information on the network doubles every 2.5 years. The massive transition of video and television technology to UltraHD 4K, will at least double the amount of television traffic. The number of security cameras that continuously transmit video information in the world has already exceeded 100 million. The amount of information on the worldwide network doubles every one and a half to two years, the amount of traffic on the worldwide network doubles every 9 months ...

By 2018, the total annual volume of Internet traffic and data transmitted via mobile, telephone and other networks reached 1.6 zettabytes, i.e., increased several times over previous years. For example, in 2016, the total amount of digital information created by mankind was only 0.16 zettabyte. 1.6 zettabyte corresponds to 1.5 trillion gigabytes. That's about 4.5 trillion YouTube videos and 940 quadrillion text messages.

The rapidly increasing amount of data requires tremendous computing power and storage capabilities, meanwhile the capabilities of modern data centers lag behind the growth of traffic and data volume. That is why data centers are one of the fastest growing market segments. According to current statistics on 2500 data centers based in the US, this figure is growing at least 10% - 15% per year.

Useful link:

<https://www.forbes.com/sites/bisnow/2017/09/29/double-digit-growth-expected-in-data-center-industry>

According to the Edge Data Center Market, the current estimated cost of data centers is \$ 4 billion and will grow to 13 billion by 2024 - in just 6 years.

Useful links:

- <https://data-economy.com/edge-data-center-market-to-surpass-13bn-in-six-years/>

- <https://www.prnewswire.com/news-releases/global-colocation-data-center-markets-2016-2018-2020-market-is-expected-to-grow-from-309-billion-in-2016-to-548-billion-by-2020-300583898.html>

The growth in the number of data centers is no longer dependent on crises or market fluctuations, conversely, it is now due to being one of the most stable and reliable businesses that exist.

Consumer data centers can be divided into several categories:

- Wholesale, such as Facebook and Microsoft, where companies buy data centers on a large scale and they are only interested in space and power supply.
- Medium-sized companies buy ready-made data centers with all the infrastructure and install their equipment.
- Small companies typically buy several racks and use equipment that is provided by the company that owns the data centers.

The trend of development in the modern world leads to the fact that it is easier and faster for consumer companies to buy a ready-made data center by investing. Thus, the turnover of funds is accelerating and the capitalization of companies procuring data centers is growing, because the creation and launch of a data center is a difficult and time-consuming process that requires serious labor and financial resources (capital investments).

Creating a company and creating a data center

Now let's talk about how to create a data center.

To create data centers, you do not need to make multi-million dollar investments or build high-rise towers. In principle, a data center can be created in an area as small as 100 square meters. This can be done by simply renting utility rooms in buildings that have no windows (no windows are a necessity for data centers). The main utilities necessary are electricity (thousands of servers consume a significant amount of electricity), broadband Internet, and air conditioning. Data centers are located in skyscrapers, offices, and even shopping malls around the United States. As it became known after the terrorist attack of September 11, 2001, there were huge data centers in 20 floors of the Twin Towers.

Now let's talk financials. If you approach this business purely from the point of view of renting (subleasing) a premise, then it is difficult to think of anything better than this business model. Judge for yourself. In an area of 1 square meter there can be a rack holding 20 to 40 servers. Servers can be rented at prices ranging from \$100 to \$250 per month. In fact, for one square meter of space you can receive from \$2,000 to \$10,000 per month!!! Where else or, in what other business, can you earn \$10,000 per square meter?

No single business or single private client will pay this much.

Of course, we are not exaggerating. You need to buy servers and racks, provide electricity, the internet, and you need the service of administrators. But even at the rate of \$2,000 per square meter, the business turns out to be extremely profitable for the realtor who rents the premises. Naturally, from the moment the decision is made to open a data center, it is necessary to put a lot of effort into building it out, recruiting staff, purchasing servers, and commissioning, etc.

The gigantic advantage of this business model is its excellent scalability. You can open a small data center with an area of 100 square meters (this makes less sense, as the profit decreases due to overhead costs), or you can make a center with an area of 20,000 square meters. It all depends on the right team. This is not just a server to install, your staff also needs the ability to sell / rent to customers. But you can start with a small center, and then expand as sales grow.

Let's talk about the technical details. Let's start with building a data center. There are companies that build data centers on the principle of "build and cut". They are engaged in the selection of buildings, retrofitting, wiring all communications, including cooling and installation of emergency generators in case of loss of power from the city. We will use one of these companies.

The next step in setting up the data center is "slicing" it into pieces. Each part of the data center is allocated for a specific customer, arrays of racks are installed, Internet service providers are purchased, the NOC (Network Operational Center) is opened, and servers are purchased.

Currently servers are not too expensive, between \$2,000 - \$5,000 if you buy new ones, and used ones can cost as little as \$100.00. Most customers may not care or notice the difference.

All other questions about creating a data center are solved for you by our company. Namely: the selection and rental of the building (or premises), ventilation, arrays of racks, power supply, connection of Internet providers, NOC, and hiring of the necessary staff.

Here are more details about the components necessary for the data center.

- A building. In principle, this is a normal building with increased requirements for ventilation and maintaining optimum temperatures.
- Array racks. Depending on customer requirements, 40,42 or 45-unit racks are installed.
- Power Distribution Systems (PDUs) are installed for each rack.
- Internet Service Providers (ISPs). In most cases, the equipment in data centers connects to an ISP to gain access to the internet. And for a newly rebuilt data center, you need to negotiate with providers so that they install their equipment and provide access to the global Internet. There are more than a hundred main suppliers in the world, and during negotiations, it is necessary to take into account who will be the consumer of services.
- Discovery NOC (Network Operation Center). In order to support and maintain the data center, service personnel with various specializations are required:
 1. Power and Cooling Techniques.
 2. Technicians for server hardware.

3. Engineers for server and network equipment
4. And some employees must be local in case of breakdowns and / or installation of new equipment.

And server maintenance engineers, depending on the requirements of the final customer, can be recruited in the USA or hired to work remotely in Eastern Europe, for example, in Belarus.

Additionally, the areas that are temporarily free of server racks, can and should be rented as office space for companies serving the data center. It is the perfect combination for IT service companies to have offices next to the data center.

According to various estimates, the growth of the office market, especially in the field of teamwork, shows a 100% increase per year.

Useful links:

<https://www.forbes.com/sites/greatspeculations/2018/06/06/can-wework-sustain-its-high-growth-the-key-to-its-lofty-valuation/>

Therefore, the combination of both a business and server racks for the data center in the rental space, creates the conditions for a safe and diversified investment.

How can we help

Our company, together with AV5 companies, offers a new way for the construction and maintenance of data centers through a combination of the reliability of the western “civilized” market and a developed engineering infrastructure of Eastern Europe.

We have 15 years of experience working with data centers in the United States and in Western Europe, we have established contacts with engineers in the United States, Western, and Eastern Europe.

Here are some common mistakes that we help to avoid:

- Incorrect positioning of the data center. Professionals before installing their equipment take into account many things. For example, the possibility of expanding the data center, the proximity and availability of backbone providers for connecting to the Internet, power fault tolerance.
- Choosing a data center in a seismically unstable region will reduce the capitalization of the data center.
- Incorrect location of the data center. For example, you place a data center in the same building as a bank, but the bank has a higher priority for reserve energy supply when the electricity goes out.
- Staff recruitment from off the street. Technicians and engineers will have access to important information, so the proper selection of personnel will ensure a well-coordinated

work and professional growth of the team with an increase in the company's capitalization.

- Lack of necessary insurance and licenses. When working in a data center, it is necessary to provide insurance to all personnel so that in case of accidents, insurance covers all expenses.

We offer our assistance in creating cloud and data centers in the United States, business support at all stages - from building a business plan to the final sale of the data center.

Stage one. Preliminary preparation

- Selection of a supplier of wholesale (wholesales) sites for data centers among AV5 partner companies
- The positioning of the data center, the choice of market and end consumers (targets), using the contacts of AV5
- Selection of sellers, among professionals who have long experience in this field and their customer base.
- Creating a brand of your data center and distributing information about services among AV5 partners in data center sales.
- Selection of technicians for maintenance of data centers, preparation of premises and the conclusion of necessary contracts. AV5 has the necessary resources and standard contracts to avoid hiring unknown technicians, thus minimizing the risks of trusting data centers to unfamiliar staff.
- Drawing up the requirements and selection of engineers.
- Drawing up a business plan.
- Maintenance of contracts between end customers and the supplier of data centers (you), taking into account the agreement on the level of service provision

Stage Two. Data center installation

After the conclusion of all contracts, the data center is installed:

- Data center design, data center map planning, placement of racks for servers, storage, and network devices.
- Rack installation, construction of a Structured Cabling System (SCS).
- Installation of power systems
- Installation and customization of equipment (servers, network devices).
- Testing
- Preparation of documentation

- Staff training

Stage Three. Operation and Development

This is the most long-term and profitable stage - customer service, and in addition to following current contracts, at this stage non-obvious proactive activities are also important, namely:

- Gathering customer feedback on service quality.
- Periodic meetings of executive directors with directors of clients.
- Marketing promotion and improvement, so that customers can see that the company is actively developing.
- Monthly social events with decision makers from customers.

Stage Four. Sale of data center

After all business processes are established, customers are recruited, and profits are shown, the company's capitalization has increased several hundred times, a data center can be sold.

Due to the swiftness of the data center market in 2017, there were 48 large transactions worth \$20 billion completed. Meanwhile in 2016, there were 28 transactions worth \$10 billion and in 2015, 17 transactions worth \$5 billion were closed.

<https://www.datacenterknowledge.com/deals/data-center-acquisitions-soared-record-high-2017>

What does our company offer?

Our company AV5, along with our partner US BUSINESS SERVICES, offers complete support for your company to create, maintain, and possibly sell a data center, namely:

- Creation of a company with the support of US BUSINESS SERVICES, including registration, opening accounts, obtaining visas, etc.
- Drawing up business and marketing plans.
- Drafting the technical project and the selection of the engineering staff with the help of AV5.
- Branding, marketing by US BUSINESS SERVICES
- Building a data center, finding and supporting end customers by AV5.
- Presale and subsequent sale of the data center by US BUSINESS SERVICES and AV5.

Would you like to know about investing in data centers? Contact us and one of financial expert will contact you to schedule a free consultation.

