Interview with Wojciech Stramski conducted by Piotr Waszczuk

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Data centers of the future: Beyond.pl opens the Polish market to AI and sustainability

We discuss with **Wojciech Stramski,** Beyond.pl CEO, **about:**

- the important role data centers play in relation to the improvement of the competitiveness of the economy;
- the development of the data center industry in the context of the growing interest in the use of AI;
- Beyond.pl's plans to expand its campus to handle a total capacity of up to 150MW;
- its cooperation with Veolia Poland to reuse waste heat into Poznan's district heating network;
- and the unique elements of the company's offerings in the areas of cloud, managed services, and IT consulting.

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Wojciech Stramski,
Beyond.pl CEO

How do changes in the technology sector, especially in the context of artificial intelligence, affect the development of the Polish data center services market?

Digitalization is unstoppable, so the demand for IT infrastructure will continue to grow. Many Polish companies and corporations still prefer to maintain IT resources locally. However, we see a growing interest in the outsourcing of services to specialized data centers, which provide higher security, business continuity, energy efficiency, and cost optimization.

The market is growing, as evidenced by systematic announcements of the construction of new data center facilities in various regions of Poland. Of course, analyses show that we remain a second or even third-tier market globally. The so-called FLAPD markets in Europe, i.e., Frankfurt, London, Amsterdam, Paris, and Dublin, unquestionably remain the largest. However, in Poland, we can - and should - seize the opportunity arising from the new needs in the area of AI and attract, the next wave of investment in data centers, related to these technologies.

What needs to be added to the local industry to better and more broadly meet the needs of AI-based service providers?

We need to address energy issues relatively quickly to provide renewable energy at a good price and generate a larger proportion of green energy in the overall energy mix. On the positive side, it is worth mentioning that the world's major players recognize Poland's progressive energy transformation. However, if we don't close the energy gap, AI infrastructure will be deployed and maintained in other jurisdictions.

Another element is optimizing the process of obtainment of administrative decisions required for these types of investments, especially from the energy/utility sectors, environmental decisions, and construction permits. The AI industry is in a race against time. Slow administrative processes mean companies will choose markets where decisions are made efficiently, which will allow for the deployment of the technologies quicker. The race to invest in AI is continuing and it would be a shame if we, as Poland, drop out of it due to internal administrative issues.

You recently reported that the Beyond.pl campus is being prepared to handle a total capacity of up to 150 MW. That's almost as much as the total power from commercial data centers nationwide in 2023.

From the perspective of our market, this is indeed a significant investment. However, this perspective changes if you look at projects underway in America or Asia, where large-scale data center campuses with gigawatt capacities are being built, especially since these facilities are expected to serve demand coming from AI workloads.

In Europe, there are fewer opportunities to launch data center projects at such a scale. However, the most prominent AI service providers are also looking for locations in Europe. Our investment addresses the needs of large

players who want to colocate their dedicated AI workload infrastructure in Europe. We are ready to serve them.

How does artificial intelligence – as a technology and as a trend – affect the operation of data centers, including Beyond.pl's facilities?

The rapid development of AI is transforming the requirements and characteristics of power loads, which is directly reflected in changing requirements from data centers. A typical enterprise rack consisting of classic servers requires a few kWs of power, and larger cloud-dedicated racks may need up to 20 kWs. In the case of AI we are talking about at least a several-fold jump in power density.

Today, in our data centers, we design solutions to handle power densities of over 130kW per rack cabinet. In the laboratories of major players, research and development work is underway on solutions which may require 1MW per rack!

New cooling and heat dissipation solutions are becoming necessary at the data center level. Traditional air conditioning solutions are no longer sufficient. Data center operators and suppliers in this sector must prepare to address these new requirements. As an operator, we can deploy liquid cooling in our facilities, including direct-to-chip, immersion, or heat exchangers (rear door cooling). In turn, OEMs are already producing these solutions. For example, our partner Hewlett Packard Enterprise has unveiled the industry's first direct liquid cooling architecture that requires no fans. This solution uses liquid cooling exclusively, providing greater energy and cost efficiency benefits than alternative hybrid cooling solutions available on the market. The direct liquid cooling architecture offers a 37% reduction in cooling power required per server. By remodeling the cooling model, data center facilities that support AI environments become highly energy efficient and can reach a PUE as low as 1.1.

Due to AI needs, will data centers run out of room for traditional IT infrastructure?

Of course not. Beyond.pl is expanding its offerings, but we will work to increase our share in traditional segments. Classic solutions are still staying and they still show demand growth. There will still be a need for storage equipment and support services offered in cloud and managed cloud models. Similarly, when it comes to colocation services for the traditional enterprise market. However, energy needs in this context are quite predictable.

In the case of AI, we are talking about a completely different scenario of using IT resources. Please remember that training AI models requires the processing of colossal amounts of data. Therefore, this is an entirely different kind of resource requirement.

How will plans to provide space for AI workloads affect Beyond.pl's existing offerings?

To be honest, change does not scare us. However, the way we think about the data center is changing. Data centers are gaining a new dimension. They are no longer just IT facilities, but also energy facilities.

On the other hand, data centers are becoming bigger and bigger heat generators because IT equipment designed to handle AI workloads gives off a lot of heat. It would be suitable for this heat not to go to waste.

Following this thinking, we recently announced a joint project with Veolia Energia Poznan that seeks to reuse waste heat generated at our data centers to power the district heating network in Poznan. The recovered heat will be a source of low-carbon energy for residential buildings and commercial and industrial facilities in the capital of Greater Poland. It is the first data center heat recovery initiative of this scale in Poland.

Since the beginning of our operations, we have been taking measures to make efficient use of the heat generated by our data centers. Our first facility is integrated with a shopping and cultural center, which naturally became a consumer of heat generated by the data center infrastructure. We also have office buildings on campus that are supplied with heat generated by the data center.

So, do data center security standards still matter in the context of market changes?

The highest levels of security are not that important in maintaining infrastructures where AI models are trained. That is why our campus already offers a multi-tier approach. On the other hand, with traditional colocation, this is still the number one topic in discussions with customers. In addition, with the geopolitical situation and regulations such as NIS2 and DORA, many organizations are reviewing business continuity and disaster recovery strategies.

From our perspective, security at the IT infrastructure level encompasses two of the most significant aspects.

The first is physical security: location, access protection, energy security, fire security, and even flood security.

The second aspect is the logical layer, i.e., everything that touches the data and systems supported by the IT equipment hosted in our data centers. Of course, as a data center operator, we do not always see what is happening within the servers of companies purchasing our services. Logical administration and management is on their side. However, we do offer numerous services that include elements of maintenance and security of our customers' systems. We also provide managed cloud services, which we need to secure appropriately.

A high level of security is one of the differentiators of Beyond.pl's offerings. How does this or other issues translate into value for customers?

IT used as a tool to build a competitive advantage implies specific needs in relation to technology. First and foremost, one needs to ensure high availability 24/7. This, in turn, translates into requirements for data center infrastructure, which must guarantee full availability and the right conditions for the uninterrupted operation of IT equipment. This cannot only be limited to contractual provisions, but actually ensuring that the most effective infrastructure solutions support operations on a technical and organizational level.

Beyond.pl is the only data center in the European Union with ANSI/TIA-942 Rated 4 and EN 50600 Class 4 certification. This confirms the highest quality of our data center services and is undoubtedly the pillar of Beyond.pl's competitive advantage.

We also meet customers' operational expectations, such as the constant optimization of IT infrastructure maintenance costs. In recent years, the cost and type of energy used to power IT infrastructure has become increasingly important. Ensuring the highest possible energy efficiency is of great importance here. In this regard, our centralized offering also stands out.

We have one of the best energy efficiency rates (PUE) in this part of the world. Importantly, we have adopted a strategy of procuring 100% renewable energy confirmed by certificates of origin. This approach is part of our vision and mission. We are working hard to ensure that digital transformation takes place in a way that is as painless as possible for the environment. We concurrently see that a growing number of multinational and domestic corporations have similarly high expectations in this area.

That's right – Beyond.pl has been consciously reaching for sustainable solutions in its facilities' operations – power efficiency, cooling, and water conservation. Currently, such solutions are relevant in the context of sustainability reports. What is worth saying about the characteristics of your data centers in this context?

With regards to energy efficiency, there is a growing awareness from Polish customers however such awareness is still limited with regards to water efficiency (with water being a cooling medium). In the West, the situation is quite different.

Beyond.pl participates in projects at the European level, and the appropriate monitoring and reporting of water use is crucial to ensure transparency in our sector. It is essential because PUE rates can be decreased if one uses higher levels of water for cooling purposes. However, it is essential to remember that water is priceless, and as a society we have less and less of it.

Our centralized facilities have an infrastructure optimized in the dimension of water management. We have also invested significant resources in the architecture of heat removal systems. We have three systems at our disposal, which we use in various combinations in real-time, choosing the most efficient solution for the current IT load and weather conditions. As a result, we are delivering better cooling efficiency than the thresholds defined in the new EU regulations.

In the case of power, as I mentioned earlier, we are the first Polish operator to power its facilities with 100% renewable energy guaranteed by certificates of origin. Renewable energy combined with our energy efficiency is a valuable tool for customers in reducing the carbon footprint generated by IT resources.

And we must all remember that we all face sustainability reporting obligations, part of which is identifying the carbon footprint generated. Companies can realistically reduce CO^2 emissions generated by corporate resources in cooperation with low-carbon data center service providers. However, the choice of a partner has to be conscious.

And what do you think is crucial for companies to transfer local resources to a professional data center?

Beyond.pl, Data Center 2

Risk appetite and the level of trust one has of vendors are key drivers that companies must assess. As an industry, we are trying to gain this trust, although it certainly takes a certain amount of courage to make the decision to move IT infrastructure to a professional data center. I am thinking especially of people who have maintained their infrastructure locally for many years and have complete confidence in their team. Emotional habit plays a role here.

Another argument favoring the colocation of IT infrastructure in a professional data center is decreasing costs and optimizing quality of service. I compare our market to the Swiss market of a few years ago. At that time, most of the companies employed an in-housed IT infrastructure maintenance model. Today, you can see that most companies' IT resources run in professional data centers.

The market speaks of growing interest in a hybrid approach to maintaining corporate IT environments, combining in-house resources, cloud services and colocation. Is such demand evident from Beyond.pl customers?

Yes. We have built and maintained environments based on cloud and physical IT infrastructure maintained in colocation or locally by the client.

There is no coincidence in this approach. In general, in Poland, we take decisions related to implementing new technologies later than in the West, but this allows us to act very consciously. We look skeptically at actions of first movers and attempt to avoid making their mistakes. We also very consciously analyze costs. Unfortunately, the stick has two ends. If we wait too long to make the right decisions we risk losing competitive advantages, as the market will run away from us. This is especially true in the age of AI, where you have to consider whether it is actually more significant risk to overinvest or risk of not investing and going out of business as a result.

When it relates to cloud services, Polish companies are aware that there is no one universal solutions that meets all their needs. Therefore, they often choose hybrid solutions that combine physical IT infrastructure and cloud resources. That is also why our traditional data center services are enriched by managed cloud and other professional Managed Services. The ability to delegate to us the responsibility to ensure the best possible functioning of the IT infrastructure or its rapid restoration in case of failure becomes invaluable, especially in today's geopolitical situation.

Concurrently one has to remember that there is a significant shortage of qualified professionals which in turn, raises the costs for in demand IT specialists. Switching to an outsourcing model is a way to concurrently maximize resource availability and optimize costs.

Moreover, we also support client environments that are not physically located in our data centers. We have clients for whom we have designed and maintained infrastructure using their in-house data centers, 3rd party data centers and public cloud providers.

Beyond.pl positions itself very well in this segment. We have a vendor-agnostic approach and access to multiple solutions. We understand technology and invest very heavily in the continuous development of the competencies of our employees. We present our customers with different options to maintain and manage their IT infrastructure and work with them to build, deploy, and maintain solutions best suited to their needs.