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Analysis of world trends in the field of cloud technology

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Abstract

The paper analyzes both traditional models of cloud computing and new innovative models that have spread over the past few years. The tendencies and perspectives of the world cloud computing market development are considered. The dynamics of all market segments extension is assessed, leaders in the implementation of cloud computing are identified. Spheres of cloud computing use by branches of economy are examined. On the basis of carried out analysis further ways of development of cloud technology are defined.

Key words: information technology management, cloud computing, innovative models of cloud services, development trends.

The globalcloud technology market develops quite fast rates. In 2016, the total costs of consumers and companies on public clouds amounted to 209.2 billion dollars, compared to 175 billion in 2015, showing a growth rate of 19.5% (Figure 1). The average annual growth rate of the global cloud computing market is about 17%. [1, 2]

Dynamics of the global cloud technology market, billions of dollars.

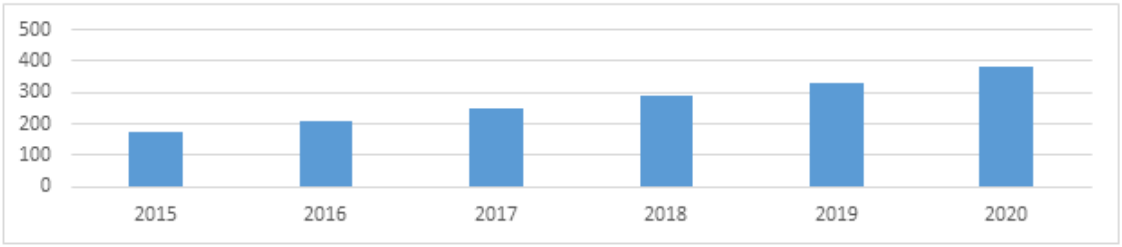


Fig 1

Given that during this period the entire global IT market grew by 2.5%, it should be noted that the increase of cloud computing in 7,8 times higher than the growth of the overall IT market, such figures are due to the benefits of using cloud computing. Many arguments support clouds: decreasing capitalexpenditures and expenses on maintenance, supporting and updating IT, lowering labor costs, the possibility of a clear investment in IT planning. Besides, the cloud are more secure, reliable, easier to use, better scaled than locally deployed solutions. The cloud promote innovations in business: allow reacting quicker to demand and to enter the market with new products or services.

Based on the research conducted by Oracle, more than 80% of companies' IT budgets will be invested in cloud computing by 2025.

The first place in terms of sales in the global market takes cloud advertising with the figure of $ 90.3 billion. BPaaS, the volume of which amounted to $ 40.8 billion, is on the second place, and the SaaS segment with the volume of $ 38.6 billion have come in third place (Figure 2). [1, 3]

Dynamics of the global cloud technology market by segments, billions of dollars

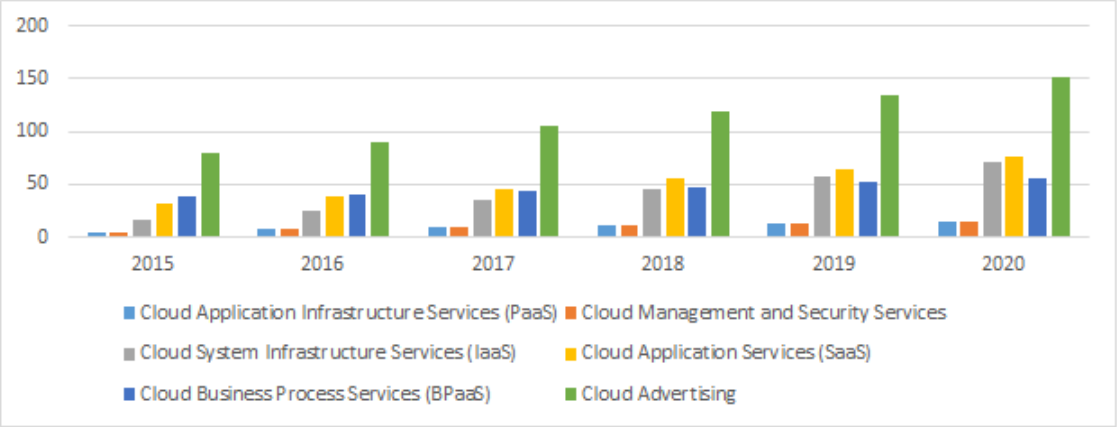


Fig 2

In 2016 the largest growth rate was shown by the PaaS segment, showing a growth of 88.4%, which is explained by the increased demand for the possibility of using an integrated approach to use both infrastructure and software. The IaaS segment with an indicator of 56.2% took the second place, and the third - PaaS with a value of 43% (Table 1) [1-3].

Growth rates of segments of the globalcloud technology market, in percent

Types of segments	2016	2017	2018	2019	2020	Average
Cloud Management and Security Services	88,42	24,30	19,10	18,87	17,46	33,63
Cloud Application Infrastructure Services (PaaS)	43,00	23,08	18,18	17,31	14,75	23,26
Cloud System Infrastructure Services (IaaS)	56,17	36,76	31,79	26,97	23,66	35,07
Cloud Application Servcies (SaaS)	22,93	19,95	19,01	17,79	16,64	19,26
Cloud Business Process Services (BPaaS)	4,08	7,35	8,68	8,61	8,70	7,48
Cloud Advertising	13,73	15,73	13,40	12,74	13,10	13,73

Table 1

As we can see from Table 1, the growth rates of the cloud technology market segments begin to decline starting from 2018 and there will be some stabilization. In general growth rates of the cloud market would decrease to 15, 2%. It is caused by the fact that those companies, which wanted to switch to cloud computing, have already done it and new clients is still in a stage of waiting for the use of cloud technology, the reason of which is shortcomings of cloud computing, in particular, improper security of data and the possibility of violation of its confidentiality.

According to the IDC company prognosis, the share of the traditional IT infrastructure would be about 46% and 54% in the cloud by 2021 (Figure 3) [4].

The dynamics of cloud infrastructuregrowth

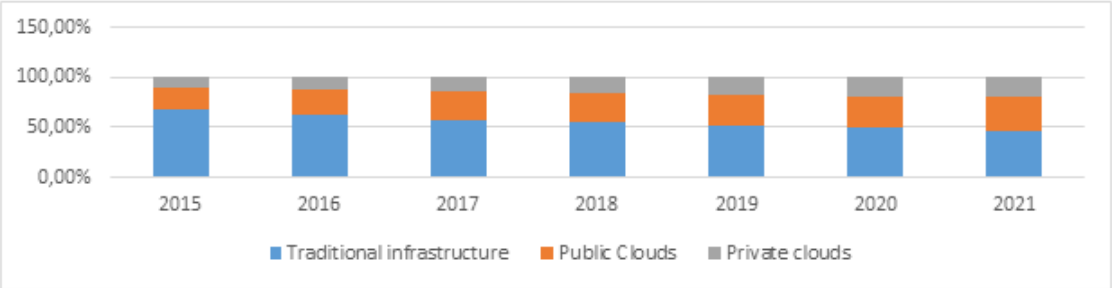


Fig 3

As we can see in Figure 3, the priority direction in the field of building cloud infrastructure in the global cloud computing market is public clouds, which exceeded private ones in volume by almost half in 2015. At the same time, private clouds surpass public ones in terms of growth rates and the volume of public clouds would go beyond private clouds by only 1.6 times by 2021. The increase of private clouds is primarily caused that belongs to the company itself and can provide the necessary data security policy and confidentiality.

The recognized leader in development, implementation and use of cloud technology is the United States, which occupies more than 60% of the global cloud computing market (Figure 4). [3, 5]

Dynamics of the global cloud technology market in the regional context

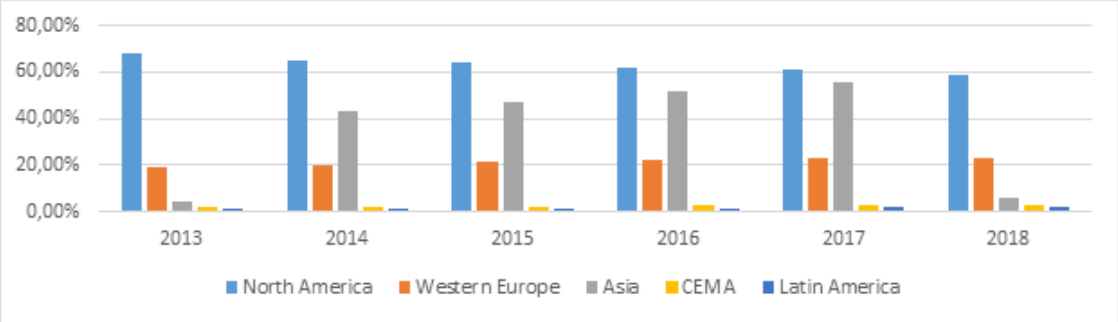


Fig 4

Such US hegemony is explained by the fact that all the largest companies providing cloud services are American. However, by 2018, the share of the US in the cloud services market is expected to decline to 59%, due to the rapid pace of implementation of cloud technology in other regions.

The world leader in the provision of cloud services is the American company Amazon, which occupies more than one-third of the world cloud market (Figure 5). [3,5]

Dynamics of changes in the positions of leading companies in the global cloud computing market

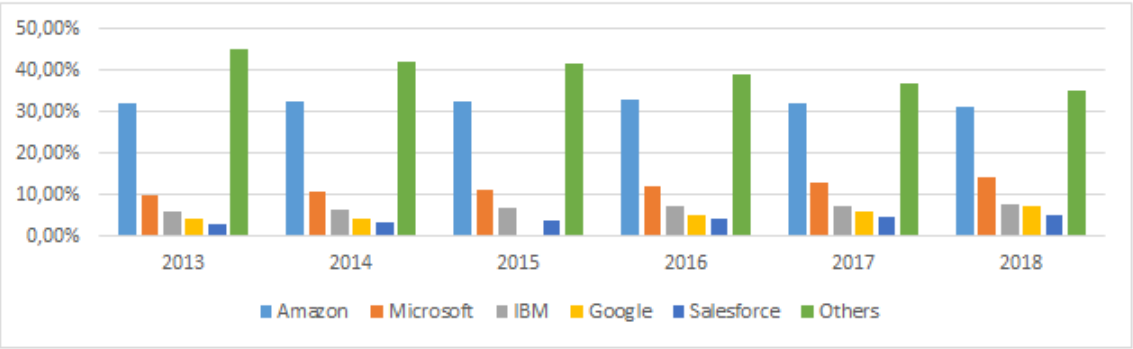


Fig 5

By 2018, Amazon's cloud market segment will drop to 31%, which is explained by the faster growth rates of its closest competitors, but the leading positions do not leave. In general, the top five companies in the sphere of cloud services would increase the market share from 55% to 65%, which indicates the further monopolization of the cloud technology market.

Cloud computing technology are firmly introduced in all spheres even in those segments, where increased security measures are required, for example, the use of cloud technology in the banking sector, which occupies about 10% from all sales (Table 2).

At the same time, it should be noted that a large part of the supply of about 52% falls to the share of large companies with more than a thousand employees. [2], [5]

The main consumers of public cloud services

Types of consumers	Market share, %
Discrete production	12,2
Professional services	11,4
Banks, financial companies	10,0
Continuous production	7,7
Retail	6,6
Others	52,1

Table 2

Successful application of cloud technology can be illustrated by the example of introduction into the US banking system, where by 2020 it is planned to transfer 90% of all automated banking systems to the cloud.

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