The Wealth effect of the acquisition: Analysis Based on Microsoft's acquisition of Nuance

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Abstract. On April 12, 2021, Nuance, acquired company,bought by Microsoft in $16billion. Trough event and SWOT analyses, the paper studies Microsoft's acquisition of Nuance. This is the Second largest acquisition case in the history of Microsoft, what's more Microsoft accelerated into the medical area. During the corvid-19, the acquisition can make sense to a company's development. From the view of the strategic adjustment, Microsoft's acquisition of Nuance is to expand ecosystem of medical care. Microsoft is good for covering the medical market. What's more, the the binding of Microsoft and the Nuance can deal with the problem of the telemedicine solutions. However, due to the advantages coming from early placement, not the ability to consistently building technical barriers and keeping up with market demand, he acquisition is sick in the patent applications, market share and the market revenue. However, acquisition is sick in that the barriers of the technology was going to be broken down. At the same time, the opportunity comes from the overall digital transformation of the medical industry in recent years. Microsoft have to pay attention that business model in need of transformation, revenue performance is poor, per capita output is low . The investment advice is that Microsoft's acquisition of Nuance is a good deal The strategic value of voice interaction in the era of AIoT has been unprecedentedly increased, and the global technology giants are becoming increasingly fierce in their pursuit of this strategic plateau.

Keywords: Wealth effect, Microsoft, Nuance.

1. Introduction

Microsoft was a computer technology company in USA, founded by Bill Gates and Paul Allen on April 4, 1975. The aim is to devote it to help the individual users and companies to realize their potential. The main business of Microsoft is to exploit, permit and supports the software whose range is extensive, provided the relevant advertising for the whole users around world. Early items were various Microsoft BASIC variations. In the past decades, the company exploited the Windows and Office in 1985-1994, foray into the Web, Windows 95, Windows XP and Xbox in 1995 to 2007, Microsoft Azure、Windows Vista、Windows 7 and Microsoft Stores in 2007 to 2011, Windows 8、Xbox One、Outlook.com and Surface devices in 2011 to 2014, Windows 10、Windows 10 Mobile、Microsoft Edge and HoloLens in 2014 to 2021. Its revenue primarily came from Productivity and Business Processes, Intelligent Cloud, and More Personal Computing Its revenue primarily came from Office Commercial products and cloud services revenue, LinkedIn revenue Dynamics products and cloud services revenue, Server products and cloud services revenue, Windows OME revenue, Windows Commercial products, Xbox contents and service revenue. Up to 6.30.2021, Microsoft's main business and revenue was divided into nine kinds. The details are shown in Table 1 [1].

Table 1. Microsoft's main business and revenue

Years Ended June 30	2021		2020		2019
Server products and cloud services	52,589	$	41,379	$	32,622
Office products and cloud services	39,872		35,316		31,769
Windows	23,227		22,294		20,395
Gaming	15,370		11,575		11,386
LinkedIn	10,289		8,077		6,754
Search advertising	8,528		7,740		7,628
Enterprise Services	6,943		6,409		6,124
Devices	6,791		6,457		6,095
Other	4,479		3,768		3,070
Total	168,088	$	143,015	$	125,843

Nuance Communications is an American multinational software company based in Burlington, Massachusetts, specializing in speech recognition and image products. In addition to its mass-market products, the company also provides technical support to governments and the military. It began with Scan Soft. And then made partnership with Siri and Apple Inc. In 2021, it was acquired by Microsoft. In the past few years, the revenue of Nuance was from Sound print identification technology, NVP platform, Speech recognition technology, ASR. And the profit mainly came from Dragon Naturally Speaking 10, PDF Converter Professional5, Omni Page 16, Paper Port 11. Nuance may have been the dominant voice company in the past and still holds the title of "the largest voice technology company in the world," with a significant patent count and market share. It is also an indisputable fact that the barriers on technology patents are gradually dismantled. At the beginning of 2015, the company like Apple, google and so on started to poach Nuance's voice technology. In addition to talent poaching by Apple, Google, Microsoft, Amazon and others, Nuance's technological advantage is also being chased away by the IT giants. Therefore, Nuance, unsurprisingly, went into decline mode. As a result, Nuance, unsurprisingly, went into decline mode. In terms of patent applications, Nuance's annual patent applications have been declining year by year since 2010, and the number of its AI patents entered a downward inflection point in 2017. In terms of market share, Nuance once held 70% of the global market, but its market share dropped to 31.6% in 2018, with Google and Apple moving into the top three. In terms of market revenue, Nuance has swung from profit to loss since 2013 and has been loss-making or marginally profitable for years. For the first quarter of fiscal 2021, Nuance reported revenue of $345.8 million, down 4% from a year earlier, and net income of just $7 million. Healthcare is arguably Nuance's only area of strength at the moment, accounting for about 50 percent of revenue [2, 3].

On April 12, 2021, Microsoft's $19.7 billion acquisition of Nuance Communications, an AI voice recognition company, the largest acquisition by the software giant since LinkedIn for $26 billion in 2016, could herald a new acquisition frenzy [4].

Since 2018, artificial intelligence, as the core driving force of a new round of industrial transformation, is releasing the enormous energy accumulated from all previous scientific and technological revolutions and industrial transformation, the basic-layer smart chip remained the largest, at about $5.56 billion. In addition, at the technical level, voice technology recognition accounts for more than two-thirds of the total size of the technical layer, reaching $11.89 billion. In recent years, with the improvement of interactive precision and edge intelligent layout, voice recognition and computer visualization have welcomed good market opportunities. However, in the last two years, full-duplex voice interaction has also started to become more common, end-to-end speech synthesis and recognition have become extensively employed, and machine speech recognition accuracy has increased to 98%. It signifies the continued development and maturation of intelligent voice technologies. According to Gartner's 2018 AI technology maturity curve, The current speech recognition has reached its pinnacle of actual production, indicating that the technology has gained widespread acceptance and that the large-scale landing is ready to start. The business model

is also maturing, which will aid in the landing of intelligent voice. Other associated intelligent speech technologies, such as natural language processing, virtual assistants, and others, are also about to collapse into the bubble trough after a wash. The demand for smart healthcare, smart finance, and smart terminal smart voice technology will become the key drivers of the global smart voice market, which Report Linker projects will reach $21.5 billion by 2024.

Based on the above-mentioned background, this paper analyzes the Microsoft company's merger and acquisition behavior, through the SWOT, which is the strengths, weakness, opportunities, threats in details. And analysis the wealth effect of acquisition.

The remaining parts of this paper are organized as follows: Part 2 is introduction, which introduces the revenue, main business and profit of Part 3 analyzes how Microsoft expended its business. Part 4 analyzes the Strengths, Weakness, Opportunities, Treats of Microsoft's acquisition. Last part is the conclusion of the Microsoft's acquisition.

2. Expand Explosion

Microsoft's ecosystem is consist of 5 distinct pillars within the Microsoft stack, which is productivity, Dynamics 365 Business Apps, Azure, Data & Analytics, 3rd party Apps, Purpose Built Apps. It includes components of Customer Relationship Management (CRM), Enterprise Resource Planning (ERP), as well as productivity applications and Artificial Intelligence or AI, which is a cloud-based business application platform. These pillars build on top of Common Data Service platform. The flowing are the five backbones of the ecosystem [5, 6].

2.1. Productivity

Increasing business efficiency by allowing data from business applications to be accessed using productivity software like Outlook. In the past, a customer would likely have to call someone in back office or operations, or even go into another system, to find out the status of their order, any outstanding cases, or past-due invoices. However, since the information is now shown in the context of your chat, users can now see everything in real time without having to leave your productivity application. At the same time, using additional collaboration tools like Teams and OneDrive to manage conversations, maintain documents, and collaborate on business tools like estimations and sales chases [6].

2.2. Dynamics 365 Business Apps

Dynamics CRM and ERP technologies were combined by Microsoft into a single cloud-enabled product offering. By utilizing intelligence, it transforms CRM and ERP so that reactive business decisions become proactive insights that enable employees to hasten business results. The common data service connects all of the Dynamics 365 Apps, including Sales, Customer Service, Field Service, Finance & Operations, and Marketing, making it the best of the breed business application platform for storing our transactional data. Additionally, the recent purchase of LinkedIn broadens the data augmentation of 500M sales professionals for Recruitment & Sales [6].

2.3. Azure, Data & Analytics

Whether it's using artificial intelligence, bots, the internet of things (IoT), or quick development of mobile and web capabilities, Azure offers a foundation for rapid development to improve people's businesses. It provides better experiences and enables smarter decisions by instantly evaluating vast amounts of data. How then may people's businesses be transformed by these business insights that make use of Azure's and analytics' capability. Here are few instances of executing wise decisions that not only boost customer satisfaction and income but also cut expenses [6].

2.4. 3rd Party Apps

Microsoft offers its own app store where users can get apps for Office365, D365, Power BI, standalone Azure web apps, and machine learning algorithms for fraud detection and forecasting. This market, often known as Microsoft AppSource, comprises a number of different markets. Instead of purchasing an entire software suite, users can browse for apps to test out or use on this site. The benefit is that users can now custom-tailor small pieces of software to carry out a specific business operation. If the software proves to be a fit, it can be user-tested and used as a service. This software's parcelled app design is distinctive and reasonably priced [6].

2.5. Purpose Built Apps

Rapid mobile development platform Microsoft PowerApps offers Low code and No code features for non-technical people to create mobile applications from pre-designed templates. Because PowerApps naturally integrate with Business Applications, Azure Services, and Productivity Apps, users may quickly add new functionality. As Power Apps-built apps offer strong business logic and workflow features to convert manual business processes to digital, automated processes, people can also use Flow for ease of integration and workflow approvals across applications. Additionally, these Apps can be used on a mobile device or a browser [6].

2.6. Conclusion

The transition from a closed ecosystem to an open one, an organizational culture that encourages bottom-up innovation, a sales model skewed toward partners, and a strong investment in research and development are all important factors underpinning Microsoft's successful cloud transition. Open ecology and business model: no longer only product as the core, but user-centered, establish partnership, mutual benefit and win-win. Microsoft no longer insists on the monopoly position of Windows, but gradually makes Windows free. At the same time, from the perspective of user experience, it breaks the previous limitations and closure and supports users to use Microsoft's application software on any platform and any device. For example, Azure, Microsoft's cloud computing platform, has fully supported the system based on Linux open-source platform System. Application software open to rival platforms such as iOS and Android: In order to expand the mobile application scene of cloud services, Microsoft announced the launch of Office for iPad and Microsoft Enterprise Mobility Suite in March 2014 Suite, which helps companies manage corporate data on their employees' devices in the office and at home. Microsoft encourages bottom-up innovation organizational culture to establish a more inclusive corporate culture, break the original organizational boundaries, achieve effective communication, and promote bottom-up innovation. Management invites junior staff to attend regular executive meetings. At the same time, the company organizes "hackathons" every year.

The acquisition of Nuance, the reason of it can’t depart from the expending ecosystem in the medical area. Microsoft has been in healthcare for years. Microsoft, could integrate Nuance's technology with its cloud services to further strengthen its path to AI-driven cloud computing growth. As known that, the medical area has a lot of competitors like Google, Apple, and Amazon. Nuance for Microsoft is an important addition to its Al+ cloud computing strategy, and a technology reserve for Microsoft to continue expanding into other areas in the future. At the same time, Nuance AI technology can be applied to Microsoft's industry-specific cloud platforms, including retail, manufacturing, financial services, and non-profit organizations. So, this is why Microsoft would spend so much to get the acquisition. As a technology platform and service-oriented enterprise, Microsoft is firmly moving forward on the road of enabling the digital transformation of the medical industry.

3. SWOT Analysis

3.1. Strengths

After the acquisition, Microsoft has a big market. Because tele medicine solutions with a significant increase in virtual access triggered by the Covid-19 global pandemic. On the other hand, the acquisition may integrate customers to bring cash flow. In competitor analyses perspective: It can eliminate potential future competitors. Because Nuance is North America's leading voice AI company, fully focused on the medical voice business. Nuance's healthcare and enterprise services segments accounted for 62% and 36% of total revenue, respectively, in the year ended September 30, 2020. From 2015 to 2020, Nuance's medical business generated operating revenues of $985 million, $951 million and $915 million from 2018 to 2020, representing 62.4%, 62.4% and 61.9% of total operating revenues; From 2018 to 2020, the enterprise services business achieved operating revenue of $483 million, $511 million and $530 million, accounting for 30.6%, 33.5% and 35.8% of the total operating revenue. As Nuance's flagship medical voice cloud platform, the revenue of Longyi Cloud increased by 54% and 38% year-on-year in 2019 and 2020 [7]. Microsoft's acquisition of Nuance is that the access of its cloud platform Longyi Cloud will inject new vitality into the field of healthcare + intelligent voice for Microsoft. On the other hand, the strategic value of voice interaction in the era of AIoT is unprecedented. This acquisition shows that the global technology giants are increasingly eager to seize this strategic plateau, and the value of AI voice leader is expected to be reassessed.

3.2. Weaknesses

Based on Nuance’s revenue figures for the first three quarters of 2016, Nuance’s business-like Imaging, Enterprise and other are not good enough in other areas, which straightly caused the revenue were underperforming and capacity per capita was too low. So, losing market share, slow revenue growth, three straight years of losses and a sinking stock price have left the former industry and technology leader in a precarious position. In terms of patent applications have been declining year by year since 2021, and the number of its AI patents entered a downward inflection point in 2017d As early as the beginning of 2015, Apple quietly set up a voice technology research and development team in the headquarters of Nuance in Boston, and constantly poach Nuance's voice technology talent, in order to eliminate its dependence on Nuance technology. And so did Google. In addition to talent poaching by Apple, Google, Microsoft, Amazon and others, Nuance’s technological advantage is also being chased away by the IT giants. For example, in 2016, Google opened up its voice recognition API for free to third-party developers, dealing a fatal blow to Nuance, causing a flood of developers to abandon Nuance for Google, and the growth of user data allowed Google to overtake in voice recognition accuracy. As a result, Nuance, unsurprisingly, went into decline mode. In terms of patent applications, Nuance’s annual patent applications have been declining year by year since 2010, and the number of its AI patents entered a downward inflection point in 2017. In terms of market share, Nuance once held 70% of the global market, but its market share dropped to 31.6% in 2018, with Google and Apple moving into the top three. In terms of market revenue, Nuance has swung from profit to loss since 2013 and has been loss-making or marginally profitable for years [8].

3.3. Opportunities

Huge digital transformation, healthcare supply market digital technology will become the key. Trend Force forecast, global healthcare voice market will reach $700 million in 2023 [7], annual compound growth rate of 24.55%, it is not hard to see that Microsoft premium acquisition Nuance core reason, is to value the tuyere of health care and enterprise services [9].

Figure 1 is about the process of Voice technology development. During the 1980 to 2010 is the star-up period, during 2011 to 2015 is the period of transformative development, during 2016 to now is the landing availability period.

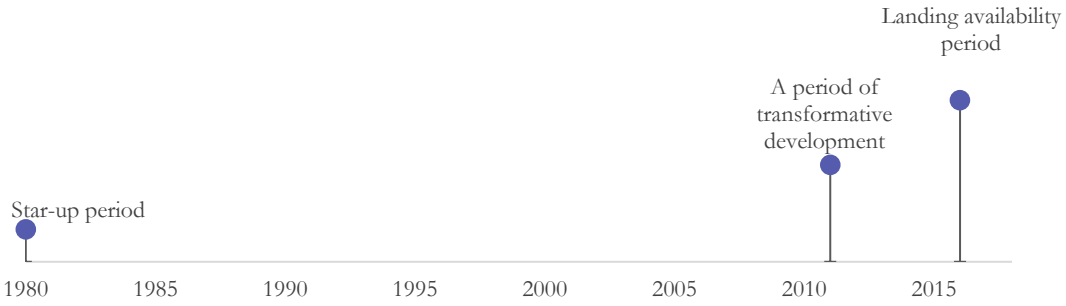


Figure 1. Voice technology development

Photo credit: Original

COVID-19 boosts demand for biometric engineering. The COVID-19 pandemic in early 2020 has further catalyzed the need for biometric engineering. Traditional biometric engineering is mainly based on image technology such as face recognition, while the technology with sound as the object of recognition is not the mainstream, and it is mainly used in farm animal health recognition. Under the epidemic, the wearing of masks has new technical requirements for face recognition, and the intelligent voice technology characterized by voice has gradually entered the market. In November 2020, a research team from the Massachusetts Institute of Technology built an AI model that can identify asymptomatic infected people by the sound of coughing with an accuracy of 98.5 percent. In the future, intelligent voice platforms based on the Internet of Things, voice markers and big data will help to ease the diagnosis and treatment process and reduce cross-infection.

In Medical Services Nuance's main competitors in healthcare include 3M's healthcare business, OptumHealth, UnitedHealth Group's healthcare business, and M*Modal, which specialize in healthcare voice. The first two have a wide range of businesses in healthcare, from medical materials to a variety of medical hardware and software, some of which intersect with Nuance.

Only M*Modal, which specializes in medical voice and electronic medical records, was most closely aligned with Nuance's medical business, which listed on Nasdaq in January 2011 and has more than 10,000 employees, mainly in the US but also a large number of Indian employees who do translation and proofreading. M*Modal was acquired by One Equity Partners, the private equity arm of JPMorgan Chase & Co, for $1.1 billion in July 2012 and had revenue of $450 million that year, about half of Nuance's medical business revenue in the same period [10].

Although M*Modal does not have publicly available revenue data for recent years, it is still a strong competitor to Nuance in the healthcare sector in terms of the size of its business. The main problems facing the two companies are similar. On the one hand, how to improve the accuracy of machine recognition, get rid of the dependence on human as soon as possible, and reduce costs; On the other hand, how to expand the voice service to more scenes in the medical market, such as outpatient clinics, rehabilitation centers, etc.

In Mobile Services, on the mobile side, Nuance has been focusing in recent years on in-car voice and the Internet of Things, which are the next big trends that are being contested by the likes of Google, Microsoft, Amazon and Apple.

In the field of intelligent driving, Google, Apple, Microsoft and Samsung have all developed their own in-vehicle systems, equipped with autonomous voice technology, and have sought extensive cooperation from traditional automobile enterprises. In the field of Internet of Things, Amazon, Samsung and Google have successively launched smart speakers and other Internet of Thing's products. Apple has also released HomeKit, a smart home development tool, to build a smart ecosystem.

As a pure voice solution provider, Nuance has lost its edge in the face of technology giants with their own voice technology, large user base and data, and high market recognition. The existing market share is likely to be eaten by the giants. In the future, we can only achieve breakthrough through differentiated competition. Either win the technology and regain the market initiative, or expand into more niche areas and look for traditional manufacturers to cooperate with.

In Enterprise Services, in the enterprise business, Nuance competes with traditional IT vendors and enterprise customer service software providers. Nuance, by contrast, has an edge in speech recognition and natural language understanding. Nuance has also been investing heavily in cloud customer service in recent years, hoping to continue to improve its automated AI customer service capabilities and expand its cloud customer service platform and voiceprint recognition solutions into more markets. In addition, Nuance is shifting its traditional software licensing model to the cloud, which is driving gross margin growth. Based on the 80% or so gross margins of existing SaaS companies, Nuance has room to grow earnings by more than 20% in the future.

Overall, the outlook for Nuance is grim. While the shift in its business model is expected to increase profitability, Nuance will face increased competition in all areas of its business. Especially in emerging markets such as vehicle-mounted voice and the Internet of Things. In the past, the giants made frequent acquisitions and accelerated their layout, while later, the startups caught up and seized the market. The advantage of the giants is the huge user base and data, and the advantage of the startups is the flexibility and innovation, but Nuance's former technological advantage has been gradually overtaken by its peers, and it will not be easy to turn the tide.

But deep learning, while a breakthrough, is far from mature. Especially for medical, legal and other professional fields with high recognition accuracy requirements, the existing technology still cannot meet the requirements. If Nuance can be the first to achieve a breakthrough in technology that will cut costs, increase profits, expand markets and attract customers, it will save itself.

3.4. Threats

Medical voice expansion has fallen short of expectations. The AI did not land as expected. The medical industry requires the improvement of the three major infrastructures of data, computing power and algorithm. At present, the people can see that artificial intelligence continues to empower all walks of life under the background of computing power development, algorithm optimization and big data construction. In the future, if the development of artificial intelligence algorithm fails to meet the downstream demand, and the development of computing power and big data is not as expected, it may affect the medical industry empowered by artificial intelligence technology. Health data connectivity has fallen short of expectations. Medical data are characterized by wide sources, multiple types and scattered distribution, and the AI-enabled medical industry requires high-quality data input. We can see that policies are promoting the construction of medical informatization, data interconnection and standardized database. If the interconnection of medical data is not as expected in the future, it may affect the application of artificial intelligence technology in the medical industry.

4. Conclusion

The deal came on 2021.4.12 after Microsoft Announced it was buying Nuance for $19.7 billion to strengthen Microsoft’s presence in the health vertical. The deal is Microsoft’s second-largest acquisition ever. During the process, acquisition, like a double-blade sword, has duple influence on Microsoft’s development. On the one hand, facing the competitors in the voice technology area like Apple, Google and so on. Microsoft got a right way to accelerate fast by making acquisition of Nuance, under the situation that the technology was lower than them in the area. At the same time, Microsoft could integrate the customers the Nuance had before to cover the market fast. On the other hand, Nuance was a company that the advantage came from being laid out early, not from being able to consistently build technical barriers to keep up with the needs of the stage.

Through research, we found that Microsoft's acquisitions brought him expansion of the ecosystem, larger markets, key drivers and cash flow. Reasonable merger and acquisition behavior can bring certain benefits to the company. First, for the Microsoft, Nuance provides the AI layer at the healthcare point of delivery and is a real -world application of enterprise AI, their combined ecosystem will accelerate growth of Microsoft Cloud for Healthcare and Nuance.

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