

Edtech with Perspective of Business Analysis

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Abstract

Introduction – The growing and widespread use of digitalization is redefining the learning and teaching process in India. Online learning has been accelerated by growing and common use of digital technologies and the learning and teaching process has been redefined in India. The pandemic has also led to the emergence of various EdTech (Education Technology) companies in India and worldwide. Due to this reason, a lot of changes are being made in the education industry. Traditional techniques and classroom teaching and learning methods are no longer sustainable. Change in consumer demands and new economic frameworks are also making a challenge to businesses. To ensure continuity, business analysts play a vital role in EdTech organizations to adapt with regular changes.

Objective – This article is aimed to describe the role of business analysts in EdTech organizations and how they can use Porter's 5-Force Analysis to determine their competitive positioning.

Methodology – Based on secondary data, this research will discover various roles of business analytics and how different factors affect EdTech organizations and their competitors.

Results – With increased push from the government of India towards digitalization in the education sector, EdTech companies should leverage the skills and various roles of Business Analysts to fuel their growth in this competitive market.

Keywords— *EdTech, business analysis, business analysts, Porter's 5-Force analysis, Education Technology, online learning, EdTech organizations*

1. INTRODUCTION

Edtech is not all about online learning. In fact, it is an umbrella of coaching and educational services like digital tools, software, hardware, and allied resources. Some of them are mobile or desktop learning apps, digital content, programme management tools, "learning management system (LMS)", content delivery platforms, cloud-based platforms, and communication platforms exchanged between stakeholders. Digital learners should go through active learning unlike traditional schooling by applying and

analyzing their knowledge. Edtech is supposed to act as a catalyst and enable institutions to come up with a digital ecosystem, replacing traditional grade-based ecosystems and learning approaches [1].

Business analysis is a specialized discipline aimed to find out solutions to business needs and business needs [2]. These solutions usually consist of the component for software development, organizational change, process improvements, policy improvements, and strategic planning. Business Analyst (BA) is the professional who is responsible for these roles [3]. Business analysts are not only liable for software development. They solve business issues by consulting with stakeholders and work across the organization. These days, most of the work of analysts is associated with software solutions/development due to significant changes businesses are going through in order to digitize these days [4].

Business analysts are the experts who know how to analyze changes and generate processes for deploying those changes. Competition has never been so fierce among the brands in this complex digital era. Brands should have best solutions, better technology and standardization to stand out in competition. Hence, survival and sustainability of a business has been more complex for companies. This is where business analysis came to the rescue. A business analyst is an emerging professional required by companies to fulfill their business needs. They constantly track business performance, positioning, and identify all major areas which need improvements and changes. They enable companies to adapt to changing trends efficiently and effectively [5].

Coming back to education, there are several educational institutions investing more on Education Technology (EdTech) solutions to improve and enhance students' learning experience. EdTech consists of several technologies to provide knowledge. Several new tech firms have made an entry into this area over the past few years, especially for providing digital training to adult students, working professionals, and employees. Mainly, these are the people who aspire to have a career boost in this digital environment. With changing dynamics of education during COVID-19 pandemic, EdTech has been an important part of each household worldwide. Both children and adults need several products and tools to grow and learn in each passing day at all levels, including K-12. Business Analysis has got a new dimension and tech firms have literally got the spotlight with EdTech as they perform different functions. In this role,

perception cannot be specific to a domain. Business analysts wear several hats at the same time and now, they are much aligned to the tech teams in the EdTech field [6].

1.2. Literature Reviews

Haßler et al [7] investigated 23 studies on the use of tablets at secondary and primary level students in schools. They analyzed explanations in these studies and discussed factors related to prominent use of tablets. However, they couldn't draw firm conclusions because of a fragmented knowledge base and limited strong evidence of using tablets in education. **Liyanagunawardena et al [8]** have challenged the belief that "Massive Open Online Courses (MOOCs)" can solve the problems related to lack of access to proper education in "Low-and Middle-Income Countries (LMIC)", using their perspectives to determine the features of "MOOCs". They argued that a complex set of issues like language barriers, access, and computer knowledge are some of the challenges overpowering the viability of MOOCs to solve education problems of people in low- and middle-income countries.

Selwyn [9] argued that it is important to view education and technology constantly through critical lens. The author also explained how technology usage in the field of education is tangled with domination, exploitation, and inequality issues and provided guidelines to deal with these challenges.

Sancho-Gil et al [10] argued that the complexity of education is often overlooked due to a narrow vision of the latest technology. It is one of the hurdles for transition and improvement of education. The authors also critically analyzed major approaches to bring digitalization to education for promoting digital inclusion and equality.

Hub's Jigsaw Consult team has created a report with a complete map of evidence on using EdTech in resource-constrained environments. This evidence mapping included resources from online research, journals, resource centers, experts, and repositories. It included the type of EdTech, outcomes, and location of study in mapping. It found a strong starting point to find out our EdTech knowledge and existing evidence [11].

A report by the "Faculty of Education" and Björn Haßler from the University of Cambridge lays emphasis on using technology in the classroom and supporting professional development of teachers. They argue that technology must complement teachers instead of replacing them. Teacher education and teachers are important for proper integration of digitalization in the classroom [12].

Sara Hennessy et al emphasized on the use of Internet and Communication Technologies (ICT) by teachers to improve quality of learning and teaching. The evidence found in this study is in favor of using ICT in learning subjects, rather than considering it as a hidden subject and helping teachers to prepare during in-service and pre-service training to use digital technologies in classrooms. The implications of

findings of this research are yet to be tested in the real world even after a decade of this study [13].

1.3. Research Gap

Most of the studies discussed above are based on using EdTech and ICT solutions in the field of education and training. In this study, we also focus on the use of Business Analysis in deployment of EdTech solutions in educational institutions. Since the onset of the pandemic, there has been a significant rise in demand for digital technologies in the field of education across the world. With this massive transition from traditional methods to digital learning and teaching, the innovation and development of EdTech is also growing. In this article, we will also discuss the role of business analysts in revolutionizing EdTech firms.

1.4. Research Question

- How Business Analysts can revolutionize EdTech firms in the digital era?
- How Porter 5 Forces Model helps in analyzing competitive position and strengths of EdTech organizations?

1.5. Research Objectives

- To determine the role of business analysts in growth of EdTech organizations
- To find out how EdTech organizations can analyze their competitive positioning in the market with Porter's 5 Forces Analysis

2. RESEARCH METHODOLOGY

A lot of researchers agree to the fact that more research evidence is needed for developing EdTech initiatives and consider it as a key concern and challenge [14-19]. It is not easy to determine the efficiency of Information and Communication Technology in education under well-resourced and controlled environments. This issue is overstated in extreme and volatile aspects. According to Jenson [20], technologies are used as tools for learning and teaching and their effects on results are not easy to measure and isolate, which is also the main cause of the gap between evidence and claims. Conclusive evidence of changes in learning and teaching practices with the use of EdTech by students is also less [21].

Education is usually perceived as part of curricula, classrooms, learning, and teaching. Support is much needed in education systems at various levels around and outside of major elements of learning and teaching in classrooms. Interventions are needed to support education in turmoil, i.e. from infrastructure to administration along with evaluation, monitoring, and assessment of students. This study uses

secondary data collected from various online sources to determine the use of EdTech firms by business analysts and help EdTech firms to determine their competitive positions in the market to help educational institutions to improve learning experience.

3. Analysis of Study

We are already on the verge of a technological revolution in education. It is the whole new era where the combination of education and technology has grown rapidly, especially since the onset of COVID-19. Though educational institutions are focusing more on EdTech products, the goal is still to improve and take learning experience to the next level. EdTech or education technology consists of using several technologies for providing knowledge. A lot of tech firms have entered into this space over the past couple of years, targeting especially digital training of students, employees, and professionals. Most of them were people who wanted to stand out in a competitive world.

3.1. How Business Analysts can revolutionize EdTech firms in the digital era?

With strong communication and analytical skills, a business analyst works with a team to understand their motivation for the project. Technically speaking, they refer to someone who turns business needs into operational ones. They also maintain and report business rules. The stakeholders of a business team can be school board, university, startup founders, or department heads. Working with a technology team is another important part of the responsibilities of business analysts. They organize, define, deliver, and maintain data and functional needs and use the product and business needs to come out with technical specs. They work with several technical team members like designers, developers, owners, product release teams, and QA teams. A business analyst is needed for each stakeholder for giving a dynamic insight to ever-changing needs.

Business analysts define the needs of end-users and recommend the right solutions to meet their needs. They engage with students and teachers to assess their challenges and needs and develop strategies. Another important role of business analysts is user acceptance. Business analysts also collaborate with marketing and sales staff and help them build the right marketing strategy for product placement and commercialization aligning with users' needs and target market (Figure 1).

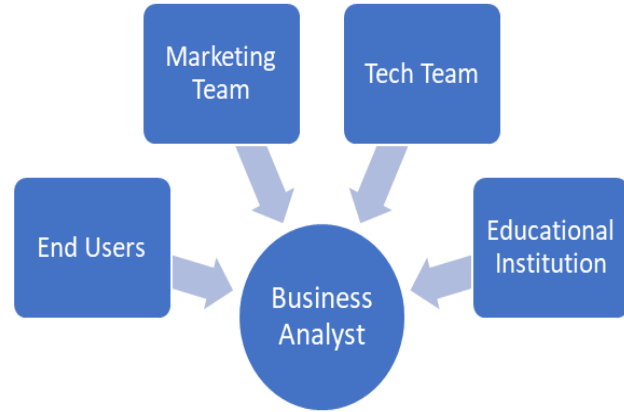


Figure 1 – Business Analyst serving various stakeholders

Business analysts are always required in EdTech firms to collaborate with their technical staff. These conglomerates are constantly on the lookout for new EdTech solutions and need dedicated teams to work on those products. Business Analysts used to have specific tasks to manage on a daily basis. These days, they play diverse roles. They are using the latest technologies in the education industry and they have more responsibilities along with traditional roles. Some of these tasks or responsibilities have been combined into one role [6].

Table 1 – Traditional Responsibilities vs. Newer Responsibilities of Business Analysts

S.No	Traditional Roles	Newer Responsibilities added to Traditional ones
1.	To constantly coordinate with stakeholders and understand their project needs.	To manage EdTech products with product managers, while highlighting product expectations and needs from the clients.
2.	To maintain traceability needs and update the same on the basis of customers' interactions and other stakeholders.	To collaborate with marketing staff for market research on the same products.
3.	To create user stories to work on with other teams.	To create product walkthroughs and presentations for clients because EdTech is an emerging space.
4.	To work with the release manager and development team	To engage with students and teachers to gain in-depth insight into the education sector.

	closely during the build cycle of the product.	
5.	To guide and support the test department to create test plans and know requirements.	To gain insight on several technologies and gears used in EdTech.
6.	To interact with end users as part of “User Acceptance Testing”	To have sensitivity and special knowledge while working with them because there are different age groups of end users who use tech products.

3.2. How Porter 5 Forces Model helps in analyzing competitive position and strengths of EdTech organizations?

Michael E. Porter proposed the “Porter 5 Forces model” in 1979. The model was aimed to determine the competitive strengths and positioning of organizations. There are three competitive and horizontal forces (“Threat of new entrants”, “threat of substitutes” and “competitive rivalry”) and two verticals (“bargaining power of suppliers” and “bargaining power of buyers”). The competition is shaped by these forces in an industry. The overall competitiveness of the industry goes down when profitability is reduced by these forces. There is a lack of rigor in SWOT analysis [22]. A lot of firms use Porter’s model to find out the profitability before entering a specific industry.

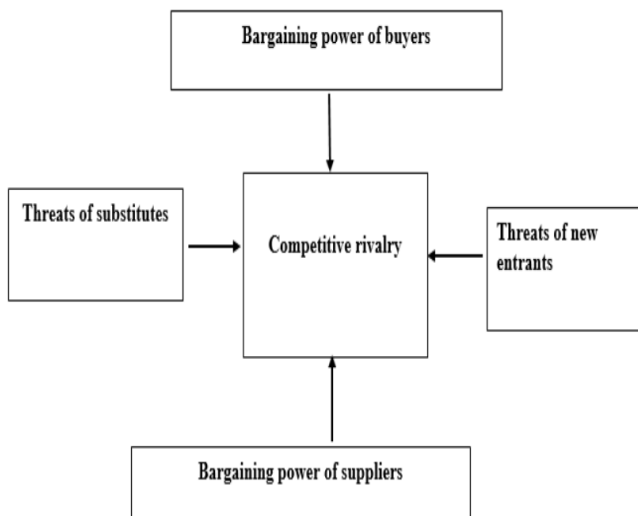


Figure 2 – Graphical Illustration of Porter’s 5 Forces Model [22]

3.2.1. Vertical Force – “Bargaining Power of Buyers”

Customers exert the pressure on businesses to get best quality products at competitive prices with superior after-sales service. It puts direct influence on an organization's ability to achieve business goals. Strong bargaining strength adds up to the competition in industry and affects profitability. On the other side, competition goes lower in industry when bargaining power is weak and organizations’ profitability and growth potential increases. Here are some of the factors improving buyers’ bargaining powers –

- More intense customer base
- Number of sellers overwhelming number of buyers
- Low psychological and economic costs of switching
- Ability of corporate clients to perform back-end integration (which means they can produce the desired products in-house rather than ordering them)
- High market knowledge, price sensitivity, and standardized products required in bulk

There are also some factors which affect their bargaining power, such as geographically dispersed customer base, inability of backward integration, low market knowledge, lack of price sensitivity, buying customized items in small numbers, and high cost of switching. This way, EdTech organizations can avoid depending on a few suppliers to improve their price sensitivity. They can improve their supply chain by working on long-term contracts with suppliers from various regions. When demand for the product is high and expertise and competencies are required, diversification and product redesign can strengthen their bargaining power.

3.2.2. Vertical Force – “Bargaining Power of Suppliers”

Here, suppliers force organizations (buyers) to adopt various techniques like increasing the prices, reducing quality, and reducing availability of products. High bargaining power of suppliers also increases competition in industry and lower the growth potential and profitability of EdTech organizations. On the other hand, weak bargaining power of suppliers can increase growth potential and profitability. Here are the factors increasing “bargaining power of suppliers” –

- Suppliers work in specific region and they have higher concentration than buyers
- It is especially strong when switching cost is high for organizations because of contracts
- When there are limited suppliers and their products are high on demand. It improves their position against buyers.

- Forward integration of suppliers is stronger than buyers' position as they are also the competitors in the same region.
- Lack of proper market awareness, price sensitivity, and proper education of buyers strengthen the position of suppliers against organization.
- High product differentiation is another factor which improves the bargaining power of suppliers.

On the other side, here are the factors affecting "bargaining power of suppliers" –

- Low switching costs
- Unlimited suppliers
- Availability of alternatives
- Lack of differentiation in products
- No risk of suppliers' forward integration
- Proper market knowledge and price sensitivity of buyers

EdTech organizations should diversify and expand their customer base by bringing new products, adopting diversification strategies, and targeting new markets. Promotional and marketing strategies are also helpful here.

3.2.3. Horizontal Force – "Threats of New Entrants"

It refers to the threats of new market players to existing ones. More players are attracted to the market when entry barriers are low and industry is profitable. So, the stakes would be high. Here are the factors affecting "threat of new entrants" for EdTech organizations –

- It takes a lot of resources and capital to invest to enter into an industry. If there is high product differentiation and customers prefer unique experience, this force lacks its positioning.
- It is also affected by certain challenges due to the regulatory framework for new firms that are looking to make an entry into the market. This way, new players have to meet strict regulatory needs which may demotivate some players.
- High psychological switching costs among the consumers also affect the threat because existing brands have already built a loyal base.
- Restricted access to distribution channels also discourage new entrants.

Threat of new entrants would be high for EdTech organizations when –

- New players can easily enter the market due to friendly regulations.

- High capital investment
- No or weak brand loyalty makes customers switch brands easily.
- There is no risk of retaliation from current market players
- New players can easily build a distribution network

EdTech organizations can work on customer relationships to develop brand loyalty and increase the psychological cost of switching brands among customers. They can engage in long-term contracts with distributors to increase their access to target audience. R&D activities can also help them achieve valuable customer information to bring out innovative solutions.

3.2.4. Horizontal Forces – "Threat of Substitutes"

Market becomes even more challenging to new and existing EdTech firms when there are so many substitute services or products available. It means customers have a choice to use alternative services or products from other industries. Here are some of the factors that give rise to this threat –

- Another industry provides cheaper alternative
- Low costs of psychological switching of switching from industry to substitutes
- Substitute item provides better quality and efficiency or even the same
- Higher economic or psychological switching cost of using substitute
- Customers cannot get the same performance and quality from other product

There are also some factors that can overcome this threat –

There are also ways to reduce this threat. EdTech firms have to be clear about how their service or product is better than competition. They should convince the customers by providing better value for money and experience. Working on loyalty may increase switching cost and also improve quality. It can set a strong basis for product differentiation to demotivate customers from using another product.

3.2.5. Horizontal Forces – "Competitive Rivalry"

Competitive rivalry defines the number of competitors giving strong competition to the organization. Hence, an EdTech organization faces steep pressure from rivals which can affect the growth potential of each other. In these industries, there is low profitability because firms accept aggressive pricing and targeting strategies over one another. Here are the factors which affect competitive rivalry –

- Limited number of market players

- Industry is rapidly growing
- Clear market leader
- High product differentiation and each player targets specific sub-groups
- High psychological/economic cost of switching for consumers
- Low exit barriers for the firms without bearing huge losses

Some factors also increase competitive rivalry among existing EdTech firms, such as, strategically diverse market players who are targeting similar markets. There will be intense rivalry when customers don't stick to existing brands and get attracted towards other brands because of the low cost of switching. This way, businesses should meet implicit demands and needs of customers to improve product differentiation and increase switching cost with long-term relationships. R&D activities can also help find new customers. Sometimes, working with rivals can be beneficial for both parties.

4. Results

In real world, organizations can make wise decisions by applying Porter's 5 Forces Model. Importance and impact of each of these forces are subject to context. EdTech organizations can make the informed "entry/exit" decisions, determine whether to enter in the industry, and figure out the effect of such forces on their competitors and their own business. In addition, important details can be revealed with dynamic analysis in this model. For example, EdTech organizations can combine PESTEL framework with this model to find out the future attractiveness of industry. Sometimes, companies lack in the right details needed to determine five forces. This way, they can use assumptions as starting point. For better understanding, business analysts can use "Value Chain" and "PESTEL" frameworks to know external environments.

Business analysts play various roles and have different responsibilities to fulfill. A lot of roles have evolved from traditional ones. Business analysis has never been so dynamic and conducive to daily needs of the EdTech industry. They can work as "Business Intelligence Analysts" to work and align with business teams to present tailor-made information. Additionally, they also help everyone in the team to grasp their data requirements and work with various departments for delivering data solutions. Another important data-driven role is "Business Operations Analyst". They are focused mainly on integrity of organizations' data and track the drawbacks and progress in daily operations. They form several reporting tools for organizations by working with data teams.

In account management and sales, "Enterprise Business Analyst" works with stakeholders and also with customer

teams closely to fill all the gaps between clients and organization. All in all, business analysts play different roles for EdTech organizations. These organizations should use their knowledge and make the most of their valuable data.

5. Conclusion

Business analysts make decisions on the basis of data and reports. They are highly in demand in the corporate world because of increasing competition. Business analysis is a promising profession in this industry. They focus on saving time, making the most of available resources, and are well versed in cost analysis to achieve projected goals for the business under the estimated budget. EdTech has become an important tool for every household worldwide due to changing dynamics in the education industry in post-COVID era. Both children and adults need several products and tools to grow and learn day by day.

It has given a new edge to Business Analysts who already perform different roles in an organization and spotlight to tech giants. Their perception cannot be limited to a specific industry. They wear several hats and are well aligned to business and technology teams in the field of EdTech.

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