



Digital Transformation Dynamics

Capability Enhancement

Abstract ID: PMIBC_19_1_010

Ms. Sudha Bhat

Senior Manager User Assistance Development, Oracle India

CONTENTS

Abstract.....	3
Introduction	3
Details of the paper.....	5
Conclusion	11
References	11

ABSTRACT

In the present day situation, is there any individual or organization not influenced by digital transformation; well almost all! It has become imperative to adapt, in order to remain competitive and relevant in this increasingly digital world. Digital disruption demands sweeping changes across wider and deeper aspects of people and processes to meet shifting customer expectations.

A simple definition of digital transformation is radical reworking/rethinking of the people, processes, products, and strategies in an organization by leveraging latest technologies. Though digital evolution has been ongoing since many years, the pace now is fast and significant.

While the foundational aspect of this change is technical, an equally influential role is of cultural transformation - mostly driven by the senior leadership. A right combination of these two aspects is the secret of highly effective results; any imbalance would result in an over-hyped technical disaster. As this transformation is of the people, by the people, and for the people (customer-centric), the shift has to be carefully strategized, calibrated, planned, executed, continually monitored, and sustained to keep pace with the emerging customer demands.

Although customer experience, workforce efficiency, operational agility, technology integration, etc. are a few elements affected from this paradigm shift - the key transformation benefit is when technology increases efficiency of every individual and business across all segments of the society (government, transportation, medicine, space, science, etc.).

This paper covers success stories/pitfalls during the journey role played by project management, and discuss winning strategy - with an intent to be a winner.

INTRODUCTION

Disruption

Disruption and change are two very dynamic forces, which are impacting individuals and industries across the world. Disruption uproots the traditional mindset and alters the way we think, behave, do business, or the way we go about our day-to-day activities. Embracing the potential of disruption with resilience and optimism creates opportunity, leading to growth. To stay competitive, alive, and sustain in today's market we have to transform, embrace, and enable the disruptive trends. In the last couple of years, so many organizations have either closed (due to powerful disruptive forces) or have been replaced by more efficient and successful businesses which are able to adopt and pioneer disruptive innovations.

Innovation for industries may mean finding faster, better, and more efficient way of doing the existing business (Sustaining technology) and/or developing new technologies/business models (Disruptive technology). In most instances, it is not always with new inventions but a totally different/new customer experience that clicks. Therefore, a combination of all ensures growth for present and future, thus helping in survival and success.

Disruptions have been so intense, touching all sectors, countries, and people. It is no longer a rarity, but has become a part of every business. While we all understand that embracing disruption is risk-taking; the payoff is noteworthy. While it exhibits the following fulfilling results, winning strategy wholly depends on the agility, collaboration, culture of empowerment, and openness of an organization.

- Enables professionals to move away from monotonous manual tasks
- Conserves time due to automation which can be used more wisely
- Increases transparency
- Provides an opportunity for strategic insight
- Predicts and analyzes patterns for future planning
- Tracks/addresses ever-evolving market demands.

Here are a few disruptive trends that have a huge value proposition in our lives:

- Life-saving drones – faster than your paramedic
- Internet of things – power to simplify life through integration
- Customers take control - businesses are in the palm of their hands
- Augmented reality - taking Ikea's couch to your living room without paying for it
- Task automation – robots on the front lines, face-to-face with humans

Digital Transformation

Disruption in the form of digital transformation is imperative for all businesses, as it better equips them with the constantly changing technology landscape. It has become a survival issue to keep pace with the emerging customer demands now and if sustained, for the future. Though it is expensive and risky, businesses have to adopt or accept failure. Each organization is at a different level of digital transformation based on its demands and challenges. If businesses want to evolve with the rapid pace of digital change, they must work to increase efficiency with technology wherever possible.

Technology and cultural transformation are two crucial aspects of this shift.

- Technology drives the need for digital transformation. Most often, it is more about shedding outdated processes and legacy technology than it is about adopting new technology. Major percentage of corporate budget, in most organizations are outlined based on the existing technology, business strategy, and market conditions. Effective use of this is reflected in growth, earnings, and overall performance.
- While technology plays an important role in driving digital transformation strategy, the work of implementing and adapting the massive changes falls on everyone. This is achieved through collective activation of enduring values, encouraging constructive behaviour, and promoting positive business outcomes in individuals, thus boosting a healthy culture. During the journey, it often reshapes workgroups and individuals and instills value, belief, trust, empowerment, encouragement, confidence, and stability to facilitate this move. Thus, leading transformation starts with empathy and soft skills. Your organization and leadership should be supportive of innovation, granting freedom, and supporting investment in a judicious manner for innovation to flourish.

The concretion for capturing opportunity in business requires embracing the uncomfortable. By welcoming disruption, taking risks, innovating, and activating an organization's most powerful intangible asset – its culture – we all have the winning formula to succeed and flourish!

DETAILS OF THE PAPER

CASE STUDY

Introduction to Technical Writing

Technical writing is a discipline of writing content that provides direction, instruction, or explanation to support various fields like engineering, software, aeronautics, robotics, finance, biotechnology, electronics, etc. It is a very purposeful form of writing intended to provide deep understanding or solve a problem for a targeted audience. Primary task of a writer is to process most complex information and present it in a format that is easy to read and understand. Therefore, clarity, accuracy, comprehensiveness, accessibility, presentation, and conciseness is very crucial. A technical writer should have mastery over the following skillsets - writing, communication, technical, research and audience perception, design, usability, problem solving, tools, listening, etc. to be able to present customizable information. Writers have always been the key mediator/communicator between technology creators, technology, and technology users.

Evolution of this Industry

Technical writing has been around for a few decades, although the popularity has magnified in the last couple of years. In fact, the first instance of a scientific technical document published in English dates back to 1400 written by Geoffrey Chaucer on astrolabe – a device used for measuring the distances of stars, planets, etc. and for calculating the position of a ship. Joseph Chapline (considered first noted technical writer) published the first established technical writing piece in 1949; a user manual that he wrote for a computer BINAC which he developed. Following this, many inventors and scientists have compiled documents about their findings and technologies. These documents played a crucial role in the evolution of the modern forms of writing. However, the real importance of documents/writers was realized when the technologies or products were created for individuals/businesses and the usage had to be explained.

This industry suddenly boomed from the 60's with the rise of technology and computers. The earlier 'nice to have' part has now become a 'must have' component of any product. During the early phase of this industry, writers were responsible to deliver the documents like user manuals, white papers, technical reports, memos, product descriptions, etc. delivered mostly in printed format. A while later, they were being shipped along with the product in the PDF or TXT file format. The greatest drawback of this approach was not being able to change the content once the product is shipped to the customer. This led to wrong or stale information residing with the customers causing immense inconvenience and disruption of business.

Impact of Digital Transformation on Technical Writing Industry

Disruption in the form of digital transformation has influenced technical writing industry in a significant way! Advanced technology, software tools, techniques, processes, and people with the changing market conditions/customer demands has had a massive influence in the authoring and hence delivery of information.

Table 1 captures some significant milestones of the technical writing industry. Note the evolution carefully, where it started from printed delivery (supporting a product) and diversified to different delivery formats (aiding the user).

Year	Milestone	Description
1949	First technical publication	Joseph Chapline wrote a user's manual for the BINAC computer that he developed.
1960	Upsurge in the demand for technical writers	The sustained growth of technology, especially in the field of electronics and aeronautics, necessitated a large-scale increase in demand for technical communicators.
1980	Technical communication as a profession	Technical communication was considered a recognized profession by the U.S. Department of Justice according to the legal system.
1987	Proliferation of desktop publishing – Digital Transformation 1.0	Publishing software like Corel Ventura Publisher, Interleaf, Adobe FrameMaker, and Aldus PageMaker resulted in the development of content with attractive layouts, graphic design styles, and typographic quality.
1999	Introduction of XML	Authoring tools, publishing tools and content management systems provided support for XML languages, thus enabling publishing of documents in any format.
2001	Introduction of Darwin Information Typing Architecture (DITA)	DITA has emerged as an XML-based end-to-end architecture for authoring, producing, and delivering topic-oriented technical content.
Current Trends (Mostly from 2010 onwards)	Digital Transformation 2.0	Digital transformation in the writing industry has facilitated the following: <ul style="list-style-type: none"> * Decline in text-intensive format giving way to pervasive visual communication * Transformation of static to dynamic interactive content across multiple channels * Single sourcing and reusable content – helps generate different forms of documentation * User-personalized context-specific help * Refining content based on reporting and analytics * Intuitive user assistance * Translation – making content available in different languages * Conventional author-reader engagement to a realm of social collaboration/feedback-driven content

Table 1: Chronology of digital transformation in technical writing

Impact of Digital Transformation on Content Presentation

Static, inaccurate, bulky, and monotonous presentation of content are a few triggers that led to the disruption in the way content is presented. This made industries innovate alternative means of presentation and delivery.

As the need for printed documentation declined, so did traditional user manuals. The decline of the printed format was accompanied by the rise of online publishing, which offered accessibility, mobility, optimum use of digital space, and accuracy. Documentation became part of the product suite like user manuals, proposals, emails & letters, press releases, specifications, technical reports, case study, white papers, website content, API guides, Online Help systems, etc.

In recent times, content presentation has further undergone a paradigm shift. A few notable ones are:

- Instructive to interactive – Most of the instructive one-sided deliverables are being transformed to two-way interactive content, which is made available with minimum time and effort. The user is thus no longer passive!

- Bulky documents to rich media content – With the lowered attention span of users, varied audience, and demand for highly accessible content - users are looking for crisp, vital, and easily available/understandable content.
- Product focus to user focus – Earlier, technical documentation was all about the product, how it works, etc. However, it is now beyond that - focusing more on when, where, and why would a user need any help with the product. What are the best possible ways of presenting information, etc.
- Author-reader engagement to a feedback-driven/customer-engagement driven content – Moving from unidirectional to multi-dimensional content creation. Utilize data from customer feedback/engagement for developing content.

To cater to the changed need, a few notable trendy content delivery formats evolved:

- Infographics – Present complex content in an easy-to-understand, interesting, and visually appealing way.
- Podcasts – Are audio content recordings available typically as a series and usually consumed on the move.
- Videos – Are visual media, which may be explainer, interactive, or live formats.
- How-to guides– A step-by-step list of how to achieve something specific.
- Help drawer – Provides quicker, more visible, in-application contextual help for the current page.
- Messages – Content to communicate information in response to user action or system changes like errors, warnings, confirmations, notifications, logs, etc.
- Tooltips - A snippet of help text available when users hover the pointer over on a page.
- Inline text - Is a way of providing small instructional text on a page, to help users input data. It is static, immediately visible, and does not require user action to invoke it.
- Guided journey – Provides high-level tasks a user should typically perform as they get started.
- Product tours – Is a way to introduce a product/product features to first-time users.
- Step-by-step panel – Visually guides a user to complete a specific task.
- Ebooks – Online information booklets.

Project Example

JARA is an American global information technology company headquartered in California. The company provides IT services, hardware, enterprise software products, and cloud engineered systems. Established in 1974, they were initially into hardware and slowly expanded into other businesses.

Like all other establishments, the products here are supported by documentation, which has some history and very closely relates to the digital transformation bubble in the technical writing industry.

During the early years, engineers who developed the product wrote the supporting documents on how the product operates and how to use it. They were provided on paper (hard-copy) and was part of the product shipment for a very long time. Traditionally, they were hand written which slowly moved to printing. Pain of printing, outdated information, bulky documents, non-searchable content, haphazard information, cumbersome process, maintenance, storage, etc. were some constraints.

With the evolution of documentation tools in the late 1980s, the company started procuring them. Skilled technical writers were hired and a small documentation team was formed. The team came up with a set of style guidelines, which helped to bring standards and structure in writing. Writers were trained in handling the new tools. Processes were engrained in the system to bring efficiency and quality. Equipped with advanced tools and trained writing staff

– JARA now moved towards digital content delivery in the year 1995 (will refer this as **Digital Transformation 1.0**). This digital transformation was a significant shift from the traditional way and the results were obvious.

A few benefits to the users and organization are listed below

Users

- Quick, easy, and efficient access of information
- Finding and retrieving data became smooth and instant
- Information - more current
- Need not physically carry documents – documents are accessed on the move

Organization

- Saved space which was required to store large amount of paper-based documentation
- Work location is no longer a constraint, especially in a global set-up facilitating real time collaboration
- Processes, tools, and standards brought uniformity/consistency in the documents
- Better organization of content
- Any individual could update the content
- Storage and versioning helped in efficient accessibility
- Easy maintenance
- Restrict access as needed
- Overall, saved a lot of time and money
- Reduced customer support calls due to robust information availability

With the advent of tablets and smartphones, along with desktops and laptops, being paperless or being digital did not suffice. JARA was stuck to the PDF and HTML content delivery for long when their competitors were way ahead! Over the years,

- Documents had become bulky and was difficult to update and maintain
- Quality of content lagged (due to constant change in writers)
- Digital delivery (PDFs and HTML) was not handy across all devices
- Books became unfriendly as information retrieval was not efficient
- Textual information was more stagnant – failing to pull audience attention

Customers looked for crisp, quick, and vital information that was accessible across all devices (anytime, anywhere). No one was interested to search for product information/help by scanning through multiple pages. Interactive information grabbed the attention!

Demands seemed more unachievable for JARA, but it was more a question of survival! Organization and top management plunged in to address this to sustain and be competitive. Digital transformation had to be applied to tools and content – synchronization of which gave birth to the current trend – **Digital Transformation 2.0** that was more revolutionary:

- Interactive dynamic content reused in various formats/languages as per the audience – Eg. Videos, Infographics, Podcasts, How-to guides, Guided journey, etc.
- User-personalized context-specific help – Eg. Help drawer, Tool tip, Inline help, Messages

With the help of advanced tools, processes, and skilled workforce (technical writers now being addressed as user assistance developers or information engineers) JARA was able to deliver artifacts - which were no longer documents, but more of assistance components available in different formats to cater to a wide range of audience for ease of use/information of a product.

JARA would continue its journey until another big wave of digital transformation takes it to the next level!

Challenges along the way!

Struggles are always masked once we see the success. JARA also experienced a similar situation. Although, benefits and revenue surpassed the expectations, the journey had its own challenges. Change had to be injected, imbibed, and nurtured into the system organically over the years to come to this state as it affected the organizational structure, system, processes, people, and the customers.

A few challenges and how they overcame are listed:

- Change in new technology, new procedure, new system, etc. caused uncertainty in job and anxiousness (shock, denial, frustration, depression, etc.) among employees initially - which wiped out eventually. Impact of technology (along with its benefits) and streamlining achieved through well established processes eased the work and increased the overall efficiency.
- Emotional turmoil and resistance vaporized with the support from strong leadership. As this was an organizational and cultural change, close monitoring and tracking at every level was very crucial for adoption. Management created a favorable and positive atmosphere by highlighting the benefits of transformation, which would foster easy acceptance.
- Initial resistance from the customers, who were used to the old format, were quickly convinced by its benefits.

Role of Project Managers

A project manager in any organization is responsible for successful initiation, planning, design, execution, monitoring, controlling, and closing of a project. They are mediators between the top management and the employees and are responsible for results of the project team. A project manager thus influences the organization, project, industry, and the people.

A change of this magnitude in JARA influenced all aspects of the project management life cycle and the onus fell on the project manager to ensure smooth execution. As people are part of every phase of any project, they are most touched. As project managers worked closest with the frontline employees (who ultimately adopt change), they were first trained, so that they were able to:

- Convince on need to change so that they own it
- Communicate the change positively with clarity on the benefits
- Encourage to openly express their thoughts and feelings (communicate and collaborate)
- Listen empathetically to their concerns, explore their fears, and take their comments seriously
- Handle resistance in a calm and positive way
- Build trust and confidence in the team
- Instill security and stability in the team
- Help the team cope with the change gradually
- Empower employees to contribute
- Create feedback and improvement loop

With all this, it was time to move on. Once the decision was made, everything came together to make the selected direction succeed.

CONCLUSION

Innovation is an ongoing journey that we live and breathe moment to moment. Organizations are increasingly promoting innovation to solicit knowledge, ideas, solution, etc. to encounter ongoing challenges.

Digital transformation as an innovation has disrupted every industry and has brought tremendous amount of changes in the business world. Businesses that can deliver and build on it will continue to grow. It goes without saying that transformation has been hugely beneficial. Here are a few of them:

- Makes business more competitive
- Improves profit and makes the company more efficient
- Facilitates to provide a better customer experience and improves customer satisfaction
- Drives data-based insights
- Updates skillsets and knowledge
- Increases agility and innovation
- Makes employees more productive

With so many benefits, drawbacks may go unnoticed! Although digital transformation is inevitable, too much unavoidable change – too soon may:

- Build stress and uncertainty
- Hinder effective implementation of new technologies as it is time consuming
- Be too costly – to procure new technology and train the staff

Organizations should judiciously weigh the pros and cons before planning the transformation projects. Technology should not be adopted for the sake of it or just to follow others. Moreover, technology alone cannot do any wonders as people have a critical role to play in its adoption and implementation.

One solution cannot fit all!

REFERENCES

- <https://blog.hellostepchange.com/blog/10-disruptive-trends-you-need-to-know-to-inform-your-value-proposition>
- <https://enterpriseproject.com/what-is-digital-transformation>
- https://en.wikipedia.org/wiki/Technical_writing
- <https://www.consultancygroup.com/blog/2018/05/the-pros-and-cons-of-digital-transformation-for-finance-departments>