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A review of the most significant challenges impacting conventional Project Management success

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Abstract— To remain competitive, it is important for organizations to be aware of the success factors for effective conventional project management. It is equally important for them to develop knowledge about project management challenges and how such challenges can be addressed. Organizations and their project management teams are influenced by the three categories of enablers, limitations and challenges.

In this study, a review was carried out to highlight the challenges impacting the effectiveness of conventional project management. The review process comprised; identifying the research question; identifying relevant references; selecting studies; charting the data; and collating, summarizing, and reporting results. This process resulted in the inclusion of eight relevant references. Based on the frequency of challenge occurrence, the following five significant challenges have been identified; communication, control, competence, culture, and complexity. Complementarity and dependency links between these five challenges have been highlighted in this paper.

In this review paper, some project management challenges may not be presented. Due to the selected databases, search terms, chosen publications, and the authors' assessment, the research may have some limitations. Furthermore, the challenges of conventional project management can partly be overcome by a mixture of other project management methods and identified recommendations.

I. INTRODUCTION

The review of conventional project management effectiveness can typically be divided into three main areas: limitations, enablers, and challenges [1]. Although each area is of importance to successful conventional project management, only the challenges will be discussed in this paper. Conventional project management defines the process of transferring know-how, techniques, and competence to project tasks in order to successfully reach project goals [2]. Effective project management is universally recognized as integral to organizations and crucial for the successful implementation of

projects, as project failure can result in a loss of time, money, and/or other resources [3]. Furthermore, project failures can potentially lead to reputational damage to the organization. As a result, conventional project management in practice involves significant challenges and responsibilities. These challenges are also related to and exacerbated by the rapid pace of digitization [4]. In the literature, the focus can often center on project problems without a clear demarcation of those problems encountered in conventional project management. “The principal argument is that too much effort has been dedicated to clarifying the reasons for project success and failure while downplaying some important research questions that need to be discussed to further the knowledge about project management” p 183 [5]. Therefore, the purpose of this paper is to discuss the challenges faced in conventional project management.

II. METHODS

A literature review is defined as “a systematic method to summarize evidence on questions with a detailed and comprehensive plan of study” (p. 1) [11]. The literature review procedure is based on the traditional approach of medical research. Its purpose is to comprehensively collect, objectively summarize, and critically evaluate several sources. As the quality of the literature review, in addition to the results, are guaranteed by a predefined range on a transparent, fully documented, and reproducible level [6, 7], the key characteristics of literature reviews include; validity, reliability, repeatability, and a structured method [8, 9] [12]. Within the context of a conceptual framework, the sections in the literature review are typically structured according to the stepwise methodology of [10, 11]; (a) frame the research question, (b) identify relevant literature, (c) select studies based on a quality assessment, (d) summarize the evidence and chart the data and (e) collate, summarize and report the results. As the literature review identifies the most significant academic contributions to a certain topic, the research question for this study is; “What are the five main challenges impacting conventional project management effectiveness?”. In this study, the PRISMA-P 2015 (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) was used to develop the research protocol [12].

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A. Identifying relevant articles & studies

The field of project management has changed significantly in recent years within the context of; theory evolution, tools and virtual teams etc. [13]. Shaped by technological and globalization trends, it is therefore significant to screen current literature for the research question. All articles and studies from the Google Scholar search, the ScienceDirect database search, citation tracking and the hand search, published between 2000 and 2020, concerning conventional project management; were of interest for this review; which focused on the main challenges of conventional project management. The clear distinction between project and project management was the basis for the critical selection of the sources. The timeframe of 2000–2020 was chosen to include conventional project management challenges. To obtain sufficient relevant literature resources, a period of 20 years was considered an adequate timeframe for this literature review although it has resulted in the exclusion of older literature.

The inclusion criteria for this study comprised; project management, challenges, conventional and effectiveness. By including these criteria in the database and hand search, all potentially relevant publications were identified. While a general literature research was carried out with Google Scholar, the authors primarily focussed on the ScienceDirect database. In addition to the standard keyword search, backward and forward citation tracking were used to identify further references. Citation tracking was re-iterated until no new research works could be added.

B. Selecting articles

Titles and abstracts were first screened for inclusion, with unsuitable references being excluded based on the publication title. After this, a comprehensive review and refinement of these articles for eligibility was conducted. The full texts of the remaining articles were then screened, eliminating those papers which did not meet the eligibility criteria i.e. reference to challenges in conventional project management. Finally, all publications with an unsuitable full text were excluded. To ensure a structured overview of the research, the references were listed in a spreadsheet organized by; year, title, citations, name of the journal, authors, countries, and their institution. The detailed search and study selection process is presented in Figure 1. As can be seen, the database search, the Google Scholar search, and the backward and forward citation search (i.e. hand search) yielded 98 relevant references based on their titles from 2000 to 2020. After further screening and the removal of duplicates, the keywords, and abstracts of 72 articles resulted in 40 full texts for evaluation. 32 further articles were eliminated based on their summaries and keywords. The full texts of the 40 remaining articles were evaluated in detail and checked for suitability for inclusion in this study. This resulted in the exclusion of 32 of these articles. Overall, the review process yielded eight publications for inclusion. The resulting

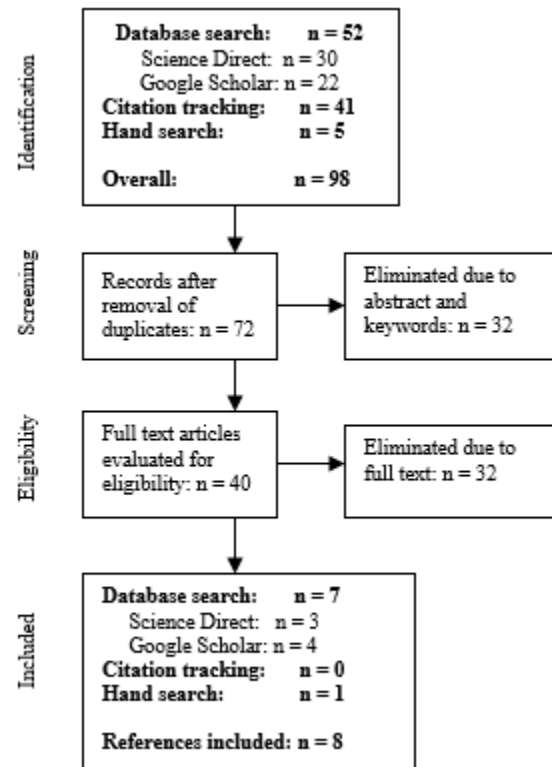


Fig. 1. Search and Selection Process

eight articles deal with challenges in conventional project management. Of these eight articles, three are from the ScienceDirect database and four result from the Google Scholar search. Citation tracking resulted in no article for inclusion, while the hand search yielded one publication for inclusion in this study. All included publications and their reference characteristics are listed in Table 1.

III. RESULTS

A. Challenges of conventional project management

Project management is present in almost all organizational areas. The challenge in conventional project management is typically to provide concise and understandable information about the project status, to document correlations, and to exchange information. In this context, it should be mentioned that the included references are not exclusively from project management journals; journals from the social and behavioural sciences and economics and sustainable development have also been included. Based on the frequency of occurrence, the main challenges outlined by the eight publications comprise; complexity, communication, control, competence and culture (Table 1).

TABLE I
CHALLENGES IN CONVENTIONAL PROJECT MANAGEMENT

		Communication	Control	Competence	Culture	Complexity
1	Engwall and Jerbrant, 2003		x	x		x
2	Best et al., 2013		x	x	x	x
3	Huang, 2016	x		x	x	
4	B. Alotaibi and P. Mafimisebi, 2016	x	x	x	x	x
5	Hirszenberger et al., 2019	x			x	x
6	Gaurav Vasantrao Patil, 2016			x		x
7	San Cristóbal et al., 2019	x	x			x
8	O'Loughlin, 2019	x	x			
Total		5	5	5	4	6

The challenge with the greatest impact, based on its fractional weighting in the eight publications is complexity with culture having the lowest fractional weighting. Nevertheless, each of these five challenges are important to any type of organization or industry.

1) Complexity

“The management of complex projects is a field that requires several specific skills and a deep understanding of the project and its environment” (p. 1)[14]. The challenge therefore is to make project management as transparent and simple as possible. Project management can be even more complex, if resources cannot be easily exchanged and thus cannot be reacted to in the short term, in the event of a shortage. This can happen where there is a high degree of specialization in a project and resources can only be re-allocated to a limited extent [15]. Therefore, in the coordination of projects, the elements of complexity and uncertainty can be difficult and stressful and hinder successful project implementation [16]. While projects are typically characterized by an element of complexity, overall project complexity can be acerbated by the misguided choice of project management methods.

2) Communication:

The most important factor for effective conventional project management is communication which in turn impacts on transparency. A project cannot succeed without regular, honest and clear agreement involving management and employees. Communication challenges can be overcome, and ensuing problems contained by frequent project meetings while global and local communication skills and habits should be emphasized to avoid communication problems [17]. Although digitization brings with it new ways of communication e.g. video/conference call, voice notes etc., it can also lead to misunderstandings, a lack of information, discrepancies, and potential information overload. Indeed, the importance of face-to-face conversation cannot be underestimated. In addition to affecting credibility, it can increase satisfaction and strengthen social contacts. “Project communication is needed to bridge the gaps between conflicting views of project stakeholders” (p. 95) [3]. Moreover, communication in conventional project management is influenced by the organizational form and the detail of the internal process descriptions. Inadequate and poor

communication can occur when there is a lack of information, and conversely, when there is too much information in circulation and things cannot be prioritized [18]. Effective communication is crucial to the success or failure of project management. This makes it a challenging balance to weigh up whether the information is sufficient or already excessive. As communication is contained in nearly all of the other four challenges, this makes it fundamental to conventional project management success.

3) Control

In project management, the control of the associated documentation can prove to be a significant challenge. The time intensive nature of controlling and/or managing the often extensive and detailed documentation related to projects can often be underestimated. Furthermore, transparency in documentation management is also a control challenge. Even with detailed project planning, it is still necessary to apply controls in monitoring progress and intervening (where relevant) in order to maintain progress [19]. Control is essential in achieving project management objectives within a defined framework. Transparency helps to more effectively control the project management process. In this context, workflow management helps to increase accountability and minimize control challenges [18]. Similarly, [3] mentions control being a challenge of project management practice. Their findings suggest that organizations need to ensure suitable control measures to guarantee the successful implementation and execution of projects.

4) Competence

Project management specialists tend to operate as intermediate elements in an organization, with a high degree of competence. A methodical knowledge of project management is required for the implementation of defined project activities. The competence range of project management skills is very broad, a breadth which can also entail a high risk of failure [20]. To manage conventional project management conflicts and generate harmony, it is beneficial to be aware of personal and cultural influencing factors. This requires expertise, empathy, and cultural competence [17]. Project managers also need to have the technical and regulatory knowledge required for the project implementation phase [21]. Such skills and responsibilities generally belong to the project manager who is

typically tasked with mediating between the project members and facilitating the project implementation.

5) *Culture*

Two of the essential factors which impact overall project management success when planning and undertaking projects, are organizational culture and structure [3]. An increasingly global and interconnected world has resulted in changing workplace demographics influenced by accelerating employee mobility and opportunity [22]. Furthermore, the trans-national operation of multi-nationals has catalyzed greater interaction among employees with diverse backgrounds, personalities, cultures and/or experiences etc. [23]. This can impact project teams where differences in culture, time zones, experiences and/or language, can present a challenge in sharing knowledge and in tracking progress and productivity. As an example, the language barrier can impede the understanding of project activities, while the use of idioms can lead to enormous difficulties in comprehension. Furthermore, an organization's corporate culture and structure can affect the reporting system and influence the manner in which conventional project management is carried out. In multicultural organizations, it is important to gain a common understanding of what defines project management success.

IV. DISCUSSION

The reviewed eight publications identified diverse conventional project management problems/challenges. Frequently, several challenges were presented; challenges which influenced each other and as a result could not always be separated. Furthermore, the challenges were not always explicitly called challenges, but instead described instances where difficulties arose and, above all, how these instances could be avoided or eliminated. A recommendation is to have a clear in-house definition of what constitutes a challenge.

The identified challenges in order of importance, based on fractional weighting are; complexity, communication, control, competence and culture.

Increasingly, conventional project management is characterized by uncertainty. "Project management is a complex activity and a risky organizational adventure, different than any functional activity or ongoing operation" (p. 1) [14]. Within the context of complex and uncertain multi-project environments, conventional project management prioritization poses several challenges. As a first step, the clarification of competencies (e.g. planning, monitoring, management, leadership etc.) to master such challenges is critical to conventional project management success [20]. "Projects are often complex and even with the best planning and application of other good management principles it is still necessary to monitor progress and on occasion to intervene in some way to keep the project on track and increase chances for success" (p. 329) [19].

Inadequate and ineffective control and communication are also recognized as critical challenges in conventional project management success [18] [15]. As an example, issues relating to time management and workflow represent control challenges. Meanwhile, "attention should also be paid to adequate communication channels and communication, the

clarity of project goals, the effective coordination of project activities, and stakeholder management and satisfaction" (p. 150) [1].

Project management complexity can also be reflected in the organization's corporate culture [24]. For example, distinctions should be made between the internal clan culture of teamwork and participation and the hierarchical culture advocating a process oriented approach, as well as between the external adhocracy entrepreneurial culture and market culture within the context of the necessary interventions and competencies required for conventional project management success.

The pressure to deliver on time and the increasing diversity of project team members can require comprehensive skills/competence in; communication (both in coordinating team members and in clarifying project goals [1]), empathy and/or an awareness of different cultures to increase conventional project management success. Contradictory interpretations in teams can increase the probability of conflicts, but at the same time, can also inspire communication within the team. It is important to "pay attention to global and local communication skills and habits" (p. 81)[17]. Only through an understanding of the existing cultural differences and the definition of an appropriate strategy can meet these challenges.

While human resources, costing and estimating resources, authority, and control are the four basic elements associated with project management practice [3], the effective management of human resources is recognized as one of the biggest challenges of the 21st century. Indeed, all of the challenges to conventional project management success as identified in this study (i.e. communication, control, competence, culture, and complexity) influence human resources. Meanwhile, costing and estimating resources, authority, and control are practical examples of these five challenges.

V. Conclusions

In general, a project is defined by a beginning and an end, with the end reached when either the project's objectives have been realized or the project has been terminated. A project may fail due to external influences even though the internal project management process may have been successful. However, a successful project with poor/failed project management is generally very unlikely. Organizational activities are typically managed by projects. The five main challenges to conventional project management success as identified in this review are; communication, control, competence, culture, and complexity.

The main recommendations arising from this review include;

- Develop a clear definition of what is understood to be an organizational challenge.
- Adopt a rapid intervention strategy to ensure that the project remains on time and within budget.
- Employ communication strategies and effective communication channels to mitigate miscommunication, cross cultural communication difficulties and loss of project control [25, 26].
- Integrate team building approaches such as; Talking Turn Cards and Lego Serious Play to encourage communication [27-29].

- Provide inclusivity training to support an inclusive and empathetic organizational culture.
- Embed ‘Pair share’ activities where team members pair with other members from contrarian backgrounds to explore different perspectives and mitigate conflict [30].
- Use Agile methodologies such as daily meetings to promote inclusion in diverse project management teams.
- Provide time and resources dedicated to upskilling competencies.
- Create opportunities for job shadowing [31].

In terms of limitations, there is a potential bias in screening, eligibility, and inclusion of publications due to the inclusion and exclusion criteria applied in the identification stage to publications from Google Scholar, the ScienceDirect database, the hand searching process and the citation tracking process. This increases the margin for error in the research. Besides, it should be mentioned that currently, the topic areas in conventional project management covered by systematic literature reviews are limited and largely relate to the health sector (the origin of systematic literature work). Despite this fact, this review provides the initial basis and highlights possible directions for the study of conventional project management effectiveness.

Further research is needed to fully understand how limitations, enablers, and challenges in conventional project management relate to and influence each other. Additionally, these commonalities and differences should be investigated in different industries and countries. Further research would also be valuable in correlating conventional project management challenges with hybrid project management challenges. A more in depth study on the impact of the identified suite of recommendations is needed.

REFERENCES

- [1] M. Dempsey, A. Brennan, V. Kaub, and J. McAvoy, "Thought-Piece on the Effectiveness of Contemporary Project Management and Its Top Performing Enablers," *IEEE Engineering Management Review*, vol. 49, no. 3, pp. 147-153, 2021.
- [2] A. Stretton, "Expanding from conventional project management into broader types of services in an organisational strategic management context," *PM World Journal*, vol. 9, 2020.
- [3] A. B. Alotaibi and O. P. Mafimisebi, "Project management practice: redefining theoretical challenges in the 21st century," *Project Management*, vol. 7, no. 1, pp. 93-99, 2016.
- [4] N. Urbach *et al.*, "The impact of digitalization on the IT department," *Business & information systems engineering*, vol. 61, no. 1, pp. 123-131, 2019.
- [5] J. Söderlund, "Building theories of project management: past research, questions for the future," *International journal of project management*, vol. 22, no. 3, pp. 183-191, 2004.
- [6] D. Tranfield, M. Young, D. Partington, J. Bessant, and J. Sapsed, "Knowledge management routines for innovation projects: developing a hierarchical process model," *International Journal of Innovation Management*, vol. 7, no. 01, pp. 27-49, 2003.
- [7] B. Kitchenham, "Procedures for performing systematic reviews," *Keele, UK, Keele University*, vol. 33, no. 2004, pp. 1-26, 2004.
- [8] Y. Xiao and M. Watson, "Guidance on Conducting a Systematic Literature Review," *Journal of Planning, Education and Research*, vol. 39, no. 1, pp. 93-112, 2019.
- [9] M. Dempsey, L. Geitner, A. Brennan, and J. McAvoy, "A review of the success and failure factors for change management," *IEEE Engineering Management Review*, 2021.
- [10] K. S. Khan, R. Kunz, J. Kleijnen, and G. Antes, "Five steps to conducting a systematic review," *Journal of the royal society of medicine*, vol. 96, no. 3, pp. 118-121, 2003.
- [11] T. Beer, J. Hirt, and H. M. Bleses, "Eventisierte Zwischenzeiten," in *Innovationen und Innovationsmanagement im Gesundheitswesen*: Springer, 2020, pp. 633-651.
- [12] D. Moher *et al.*, "Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement," *Systematic reviews*, vol. 4, no. 1, pp. 1-9, 2015.
- [13] K. Jugdev, R. Müller, and M. Hutchinson, "Future trends in project management: A macro-environmental analysis," *Project management circa*, pp. 229-240, 2025.
- [14] J. R. San Cristóbal, E. Diaz, L. Carral, J. A. Fraguera, and G. Iglesias, "Complexity and project management: challenges, opportunities, and future research," vol. 2019, ed: Hindawi, 2019.
- [15] M. Engwall and A. Jerbrant, "The resource allocation syndrome: the prime challenge of multi-project management?," *International journal of project management*, vol. 21, no. 6, pp. 403-409, 2003.
- [16] H. Hirszenberger, J. Ranogajec, S. Vucetic, B. Lalic, and D. Gracanin, "Collaborative projects in cultural heritage conservation—management challenges and risks," *Journal of Cultural Heritage*, vol. 37, pp. 215-224, 2019.
- [17] J. Huang, "The challenge of multicultural management in global projects," *Procedia-Social and Behavioral Sciences*, vol. 226, pp. 75-81, 2016.
- [18] A. Miskimmon and B. O'Loughlin, "Narratives of the EU in Israel/Palestine: narrative “stickiness” and the formation of expectations," *European security*, vol. 28, no. 3, pp. 268-283, 2019.
- [19] R. J. Best, *Market-Based Management: Strategies for growing customer value and profitability*. Pearson, 2013.
- [20] G. V. Patil, "Network-Based Marketing," *Network*, vol. 3, no. 5, 2016.
- [21] M. Li, W. H. Mobley, and A. Kelly, "When do global leaders learn best to develop cultural intelligence? An investigation of the moderating role of experiential learning style," *Academy of Management Learning & Education*, vol. 12, no. 1, pp. 32-50, 2013.
- [22] M. Derven, "Diversity and inclusion by design: best practices from six global companies," *Industrial and Commercial Training*, 2014.
- [23] S. Altiner and M. B. Ayhan, "An approach for the determination and correlation of diversity and efficiency of software development teams," *South African Journal of Science*, vol. 114, no. 3-4, pp. 1-9, 2018.
- [24] B. Buh, "Approaches towards business process management adoption under different organizational cultures," *Doctorial Dissertation, Ljubljana*, 2016.
- [25] A. Brennan and M. Dempsey, "Perceived Non-value Added Activities in the Research Grant Application Process—Through a Lean Six Sigma Lens," in *Lean Six Sigma in Higher Education*: Emerald Publishing Limited, 2020.
- [26] J. McAvoy *et al.*, "Investor decision making: an investigation of the modality effect," *Journal of Decision Systems*, pp. 1-22, 2022.
- [27] M. Tawalbeh, R. Riedel, M. Dempsey, and C. Emanuel, "Lego® Serious Play® as a Business Innovation enabler," in *5th European Lean Educator Conference*, 2018: NUI Galway.
- [28] M. Dempsey, R. Riedel, and M. Kelly, "Serious Play as a method for process design," in *IFIP International Conference on Advances in Production Management Systems*, 2014: Springer, pp. 395-402.
- [29] M. Dempsey, A. Brennan, and J. McAvoy, "Barriers and waste in the research grant application process in higher education through a Lean Six Sigma lens," *Management and Production Engineering Review*, vol. 11, 2020.
- [30] M. Dempsey and A. Brennan, "Turbocharging the journey into the liminal space and beyond," in *11th International Technology, Education and Development Conference*, 2017: International Academy of Technology, Education and Development (IATED).
- [31] J. McAvoy, M. Dempsey, and E. Quinn, "Incremental learning in a capstone project: Not all mature," *stress*, vol. 1, no. 2, 2020.