Improving Remote Employees' Organisational Productivity – Practical Guidelines for Identifying and Managing Bottlenecks in Today's World

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Abstract: This study investigates the impact of bottlenecks onthe productivity of remote employees. Flexible work arrangements (FWAs) increase the performance of employees as long as they get the required support from their organisations.The bottlenecks that arise are related to the nature of an organisation, the personality of an employee, family demands and the perceptions on the management of FWAs. Organisations that invest in enhanced communication andthe provision of support services are likely to address the possible bottlenecks with ease. They also attract and retain the best talent, thereby maintaining good performance. They can further usetotal quality management and the theory of constraints to assess the productivity of virtual or remote employees working on sequentially dependent tasks. Furthermore, this study proposes guidelines for minimising productivity bottlenecks.

Keywords:productivity, bottleneck, virtual employees, remote workforces, total quality management, theory of constraints

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I. Introduction

Technological advances have either reduced or eliminated recruitment challenges. Organisations offer flexible work arrangements (FWAs) that benefit employersas well as employees. These arrangements overcome the factors associated with workers' inefficiencies, such as poor communication, ineffective accountability and increased disruptions. Organisations depending on sequential tasks through in-office and remote work collaborations face serious productivity challenges. It is common for colleagues at the office to wait for the ones working remotely to deliver their work, so thatthey can, in turn, continue. Remote work lacks quality control measures that can address productivity bottlenecks due to the autonomy ofthe remote workers (Ciarniene and Vienazindiene, 2018). Indeed, organisations should provide favourable work environments and concomitant resources, such as on-site childcare, flexible work schedules (flextime), a compressed work week, telecommuting, job sharing, part-time work, or breaks to increase employee satisfaction and organisational commitment to increase satisfaction and commitment(Fiksenbaum, 2014). The total quality management (TQM) and the theory of constraints (TOC) showcase the methods of addressing bottlenecks to improve employee productivity.

This report is divided into five sections: introduction, methodology, results, analysis and conclusion and recommendations. The introductory part introduces us to the possible bottlenecks associated with remote workers. The methodology section highlights the process used to gather the relevant articles, while the results section discusses the main findings. The analysis section delves into the bottlenecks that arise among remote workers, the impact they have on productivity, the ways in which to resolve such challengesusing TQM and TOC theoriesand the impact of effective flexible working arrangements on productivity. The final section presents the conclusion and recommendations,affirming the major findings of this study.

II. Methods

Search Strategy: The practitioner obtained peer-reviewed journal articles and published reports. The main keywords searched included 'productivity', 'bottleneck', 'virtual employees', 'remote workforces', 'total quality management' and 'theory of constraints'. The practitioner reviewed the articles' abstracts and conclusions as well as their reference lists to determine whether they were relevant to this study.

Article inclusion and exclusion Criteria and Quality Assessment: The researcher developed a specific inclusion and exclusion criteria to ensure that only the most relevant articles would be used. The first criterion was to focus on articles published from 2010 onwards. Using the most recent studies would be the most effective strategy in achieving the research objectives. Mainly, the focus was on researches that had been

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conducted in firms offering various flexible working arrangements. The considered studies had at least 30 adult participants who were remote workers and at least five managers/directorsor executives who weresampled. The researcher included only four qualitative research-basedarticles to broaden the scope of this study. Unpublished articles, dissertations, articles that had fewer participants and those that failed to meet the keyword threshold or the study objectives were excluded.

The researcher excluded blogs and other sources that expressed personal opinions unsupported by academic research or sufficient evidence. The sources finally used were thoroughly investigated to ensure that the information presented had been properly analysed and interpreted. The standardised form used to achieve the research objective included the study design, the number of participants, the objectives, the participants' characteristics and the main findings. Moreover, the researcher critically evaluated the title, abstract, introduction, methodology, results, discussion, and conclusion sections to determine the eligibility of the considered articles. It was easier to use a five-point Likert scale with 'very good', 'good', 'average', 'bad', and 'very bad'. Only those articles that were 'very good' and 'good' were deemed as relevant, since they met all the criteria. These articles have been cited depending on how they relate to the study findings. The articles had varying themes, some of which overlapped. They have been organized according to the number of participants (Table 1) and the articles with overlapping themes (Table 2).

Table 1: Articles' number of participants in descending order

Author(s)	Publication	Participants
Chen, Y., and I. S. Fulmer	2017	17895
Brunia, S., De Been, I., and T. J. M. van der Voordt	2016	7140
de Menezes, L., and C. Kelliher	2016	2617
Leslie, L. M., C. F. Manchester, T.-Y. Park and S. I. A. Mehng	2012	1834
Greer, T. W., S.C. Payne	2014	1560
Kim, H., and Y. Gong	2016	1336
Hoeven, C. L., and W. Zoonen	2015	1005
Troup, C., and J. Rose.	2014	856
Bentley et al	2016	804
Sweet, S., M. Pitt-Catsouphes, and J.B. James	2017	721
Ferdousi, F., K. Baird, R. Munir and S. Su	2018	673
Sweet, S., M. Pitt-Catsouphes, E. Besen, and L. Golden.	2014	545
Bloom, N. J. Liang, J. Roberts, and Z.J. Ying	2015	503
Subramaniam, G.A., B. J. Overton, and C.B. Maniam	2015	396
Smith, S.A., A. Patmos, and M. J. Pitts	2018	384
Ghadi, M. Y	2017	381
Bartel, C.A. A. Wrzesniewski. and B.M. Wiesenfield	2012	374
Ciarniene, R., M, Vienazindiene	2018	316
José Andradea, Luís Mendesb& Luís Lourençoc	2017	307
Duke, É. and C. Montag	2017	262
Golden, T.D., and S. Raghuram	2010	226
Daniel, S., and S, Sonnentag	2015	222
Madlock, P.E	2018	222
Prajogo, D. I. and B. Cooper	2017	201
Lee, J.-S., K.-J. Back and E. S. Chan	2015	178
Muelen, N., P. Baleen, and E. Heck	2012	141
Choo, J.L.M., N.M. Desa., M.H.H. Asaari	2016	130
Thompson, R. J., S. C. Payne., and A. B. Taylor	2015	130
Michel, R. D. J., C. E. J. Michel	2015	125
Hasan, N.A.B., and L.S. Teng	2017	120
Tate, T.D., F.M. Lartey., and P.M. Randall	2019	120
Fiksenbaum, L.M	2014	112
Brummelhuis, L.L., A.B. Baker, J. Hetland., and L. Keulemans	2012	110
Doble, N. and M. V. Supriya	2010	110
Muelen, N., P. Baalen, E. Heck, and S. Mülder	2019	90
Cooper, R. and M. Baird	2015	66
de Vries, H., L. Tummers, and V. Bekkers	2018	61
Zia, A., and H. Bilal	2017	54
Idris, A	2014	8
Dizaho, E. K., R. Salleh and A. Abdullah	2017	N/A
Trojanowska, J., and E. Dostatni	2017	N/A
Neyestani, B., and J.B.P. Juanzon	2016	N/A
Karimi, A., H. Safari., S.H. Hashemi., and P. Kalantar.	2014	N/A

Table 2: Articles with overlapping themes

| Author(s)	Theme
Bloom, N. J. Liang, J. Roberts, and Z.J. Ying (2015); de Menezes, L., and C. Kelliher (2016); Hasan, N.A.B., and L.S. Teng (2017)	Productivity
Lee, J.-S., K.-J. Back and E. S. Chan (2015); Chen, Y., & I. S. Fulmer (2017); de Menezes, L., and C. Kelliher (2016); Troup, C., and J. Rose (2014).	Job satisfaction
Michel, R. D. J., C. E. J. Michel (2015); Dizaho, E. K., R. Salleh and A. Abdullah (2017); Doble, N. and M. V. Supriya (2010); Hasan, N.A.B., L. S. Teng (2017); Daniel, S., and S, Sonnentag (2015); Subramaniam, G.A., B. J. Overton, and C.B. Maniam (2015); Ciarniene, R. and M, Vienazindiene (2018); Brummelhuis, L.L., A.B. Baker, J. Hetland., and L. Keulemans (2012); Leslie, L. M., C. F. Manchester, T.Y. Park and S. I. A. Mehng (2012).	Work-life balance
Tate, T.D., F.M. Lartey., and P.M. Randall (2019); Bentley et al (2016); Thompson, R. J., S. C. Payne., and A. B. Taylor (2015); Brunia, S., De Been, I., and T. J. M. van der Voordt (2016); Chen, Y., & I. S. Fulmer (2017); Choo, J.L.M., N.M. Desa., M.H.H. Asaari (2016); Idris, A (2014); Hasan, N.A.B., and L.S. Teng (2017).	Organisational Commitment
Cooper, R. and M. Baird (2015); Kim, H., and Y. Gong (2016); Fiksenbaum, L.M (2014); Sweet, S., M. Pitt-Catsouphes, E. Besen, and L. Golden (2014); Sweet, S., M. Pitt-Catsouphes, and J.B. James (2017).	FWA availability
Prajogo, D. I. and B. Cooper (2017); Andradea, J., L. Mendesb, and L. Lourençoc (2017); Ferdousi, F., K. Baird, R. Munir and S. Su (2018); Karimi, A., H. Safari., S.H. Hashemi., and P. Kalantar (2014); Neyestani, B., and J.B.P. Juanzon (2016).	TQM
Duke, É. and C. Montag (2017); Ghadi, M. Y (2017); Zia, A., and H. Bilal (2017); Muelen, N., P. Baleen, and E. Heck (2012); Muelen, N., P. Baalen, E. Heck, and S. Mülder (2019); Smith, S.A., A. Patmos, and M. J. Pitts (2018); Greer, T. W. and S.C. Payne (2014); Hoeven, C. L., and W. Zoonen (2015); Bartel, C.A. A. Wrzesniewski. and B.M. Wiesenfield (2012); de Vries, H., L. Tummers, and V. Bekkers (2018); Golden, T.D., and S. Raghuram (2010); Madlock, P.E (2018);	Isolation, loneliness, communication
Trojanowska, J., and E. Dostatni (2017).	Theory of constraints steps

III. Results

Study description

The article search via Google scholar generated about 500 articles. After reviewing the titles, abstracts and conclusions, only 200 articles turned out to be fit for review. Further analyses of the articles led to the exclusion of 155secondary articles.Therefore, the researcher only used 43 articles in the study; the oldest article was published in 2012, while the latest one has been published in 2019. The range of six years facilitated recent yet invaluable information about the themes under study.

Analysis

Many firms across the world are implementing FWA to derive its many benefits (Leslie *et al.*, 2012). The common approaches include choosing when to start and complete tasks, working from a location other than office, compressed work weeks, part-time work and job sharing among several colleagues (Leslie *et al.*, 2012). As already known, while organisations aim to save the costs associated with less office space and equipment, remote workers tend to be more successful in their careers. In fact, there is a positive relationship between FWA and career success (Leslie *et al.*, 2012). Moreover, FWA allows employees to handle their personal issues better, which makes them remain more satisfied. Consequently, they are likely to be more productive in their work. However, there are serious bottleneck challenges related toFWAs as well.

The bottlenecks of flexible working arrangements can arise in cases where remote employees compose any parts of sequential task chains, as shown in Figure 1. The productivity of employees working in offices and those working remotelycan overlap and, in case any of the two fail, lead to serious challenges (Kotey, 2017; Mas and Pallais, 2017).The most common case involves the failure of delivery or late delivery by remote workers. Therefore, others in a chain have to find ways to complete the tasks assigned to the remote workers or wait for them to complete their work. Such issues can have serious cost implications on employers, especially those working with fast-moving or sensitive products.

Figure 1: Sequential chain of processes in a virtual workforce
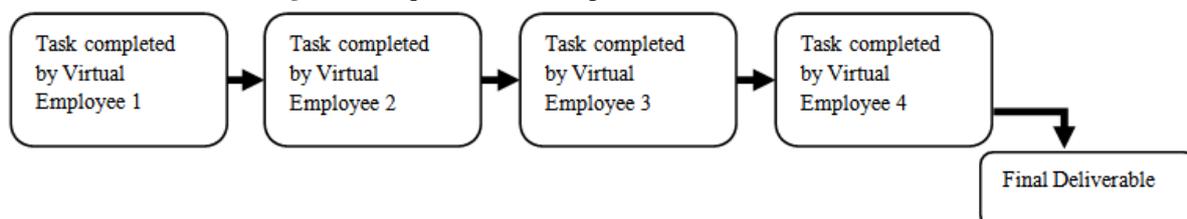
There is a high probability of a feeling of disconnectedness among remote workers,since usually there are no colleagues available whom they can consult (Zia and Bilal, 2017). Suchsocial isolation can turn some of the remote employees less productive. In addition, theymight fail to come across important opportunities such as collaborative learning, instructing and social networking (Zia and Bilal, 2017). For example, teleworkers experience social and physical isolation as well as the feeling of being left out(Tate, Lartey and Randall, 2019; Bartel, Wrzesniewski and Wiesenfeld, 2012). In some cases, they might feel that a management team does not include them in the relevant decision-making processes, which may resultantly influence their attitudes towards their work. Such remote employees may resortto absenteeism, careless behaviours, and late arrival at work/completion of projects (Ghadi, 2017). The problem could be even worse in the case a management does not support its teleworkers. Bentley *et al.* (2016) claim that the lack of organisational support increases social isolation,which exacerbates psychological stress. Further, in their study on a medium-sized Dutch municipality, de Vries, Tummers and Bekkers (2018) affirm that most telecommuters experience professional isolation. Although they only worked with only 61 participants who filled their daily questionnaires for one week, their finding can be generalised to other municipalities across the world. Professional isolation manifests more in teleworkers in the public sector as compared to those in the private sector (Zia and Bilal, 2017; de Vries, Tummers and Bekkers, 2018).

Employees working remotely may experience distractions and interruptions during their work hours. According to Mulen, Baleen and Heck (2012), distractions can be generated internally, through anxiety and stress or working envionments and organisation policies, or externally, such as the decision to engage in other activities during the working hours. Most teleworkers can control the internal and external distractions they face through various management practcies. However, they cannot manage the interuptions that maybe too common for them. Those working from home may have to engage in personal activities simultaneously while working or get unexpected visitors, among other distractions (Mulen, Baleen and Heck, 2012; Thompson, Payne and Taylor, 2015). They can also experience disruptions from emails or popular social media platforms.Duke and Montag (2017)and Brummelhuis*et al.* (2012) stated that there was a positive correlation between smartphone use and self-reported decline in productivity. Moreover, many people reportedly waste several human hours by using smartphones when they should be working. The problem could be worse in unregulated work environments,in which clear temporal, psychological, and physical boundaries are found to be lacking (Hoeven and Zoonen, 2015; Greer and Payne, 2014).

Lack of communication among team members

Communication is one of the most important factors in seamless knowledge sharing between teleworkers and their colleagues and a company's management. The communication between these three groups is insufficient in most cases. Mulen, Baalen, Heck and Mülder (2019) emphasize that communication usually depends on the medium chosen, which also depends on the knowledge of all the parties involved. Teleworkers, their colleagues and the management can choose emails, video calls, or other means to disseminate information. However, Smith, Patmos and Pitts (2018) assert that most of the methods used to communicte with remote employees are not as enriching as face-to-face communication, which is the best and most preffered method of sharing information directly. In addition, the temporal and spatial separation of the teleworkers removes the chance of face-to-face and realtime communication (Mulen, Baalen, Heck and Mülder, 2019, p. 4). Lack of proper communication channels may also have serious consequences on firms that require constant communication and collaboration between supervisors and remote workers, such as the organisations in the insurance industry (Madlock, 2018, p. 75). In this regard, the lack of proper communication between the parties inolved could be very costly. Thus, remote workers may have to redo their work in the case the management mandates changes that do not reach them on time. On the other hand, a firm may have to spend more resources to recify any of its errors or wait for its teleworkers to redo their work.

Expensive infrastructure investment

Organisations that have flexible work arrangements usually need to invest in infrastructure at offices and at a worker's location (Zia and Bilal, 2017).Here, the main objective is to ensure that the workers can deliver their work within the specified deadlines. The initial investment may entail the purchase of expensive information technology equipment, costly internet bundles and other accessories that can enhance real-time communication between the parties involved. These firms may also need to invest in training programs to make remote workers adapt to and become adept inhandling new technology. For instance, Zia and Bilal (2017) find that many employees in Pakistan lack the necessary skills to use computers and sophisticated technology. In addition, firms offering flexibe working arrangements may need to invest in technology that can allow interactions between colleagues in order to enhance knowledge sharing.They may also be compelled to conduct awareness campaigns within organisations to ensure that all their workers undeerstand the definitions and types of flexible working programmes. In fact, Zia and Bilal (2017) assert that some of the teleworkers participating in

their research did not know that their roles were related to telecomuting,even though they had already been working for a while. Investing in exenpensive technology does not guarantee that workers will always deliver their work on time. Moreover, there might be failures that could only affect some employees due to technical issues that are beyond their hands. Additionally, other issues such as power outage and bad weather that may also affect their working schedules. Morover, extreme weather conditions such as sandstorms can destroy the infrustructural components used to enhance cmmunication and work between remote workers and their supervisors/offices.

Lack of accountability

Greer and Payne (2014) claim that managers are concerned that their employees working under various flexible working arrangements may not meet their expectations, considering that there is no way to monitor them.These managersare likely to keep following up on their workers' progress to ensure that the latter groupcompletes the assigned tasks. The perceived lack of accountability among most managers may have a serious consequence in this respect. Idris (2014) states that many remote workers dislike being followed up all the time. They claim that their supervisors should have enough trust that they can accomplish their tasks on time and also fulfil expectations. Remote workers can also display competency by ensuring that they deliver their work on time and,hence, keep managers from breathing down their necks, so to speak. In addition, supervisors need to be lenient with their workers, especially after they have initiated remote working arrangements (Idris, 2014). The participants in Idris's (2014, p. 80) study affirm:'Top management must learn to trust their employees while subordinates must be responsible enough not to breach that trust…the problem is that we haven't reached the stage where we can trust our staff enough to let them do their job without hovering over them all the time'. However, changes in most companies are not easy, as employees become used to following certain traditional methods over time. One of the executives representing a large bank in Idris' (2014, p. 81) study claimed, 'Flexible working involves huge shifts in organisational mindset but it's hard to change the mindset of the entire organisation, when it is as big as ours. When people have been used to a certain way of doing things, convincing them that there is a better way won't be easy'.

Identifying Bottlenecks: The Theory of Constraints (TOC)
The theory of constraints, introduced by Dr Eliyahu Goldratt in his 1984 book *The Goal*,can be used to address the bottlenecks realised in flexible working arrangements (FWA). The process is composed of a five-step procedureprovided by Goldratt(Figure 3):
Step 1: Identify the bottleneck: This step involves the identification of the specific component that hinders the performance of a system(Trojanowska and Dostatni, 2017). Systems that involve more processes have more constraints. Therefore, it is important to determine the various constraints at different levels of a system before proceeding to the next step.
**Step 2: Improve the existing capacity of the bottleneck:**Bottlenecks must be immediately resolved via improvements that must be recorded. There are several opportunities that can be leveraged, e.g. lowering costs, quality control measures and the removal of bad production units commonly used during the later stages of a system (Ghadi, 2017). However, implementing quality control measures to remove bad units prior to their entrance into a system's weakest processes can prove to be beneficial.
Step 3: Subordinate every other decision to the bottleneck: In a sequential chain, the completion of a task is typically dependent upon the previous task. A system's non-bottleneck segments should be left unattended until all the bottleneck segments are dealt with. Subordination of the process to match that of the particular constraint allows the maintenance of consistency in production, a reduction in costs and increases in performance (Trojanowska and Dostatni, 2017). These tasks could be as follows: checkingaccounts, filing paperwork and training. Accordingly, the costs incurred on other elements are minimised while ensuring that the given system functions at the same pace as the bottleneck.
Step 4: Add capacity to the bottleneck: The fourth step is the continuous improvement over the constraint such that it eventually overcomes itself (Trojanowska and Dostatni, 2017). The main objective here is to add capacity rather than increase efficiency.
Step 5: Review and repeat: A certain bottleneck might not always be a chain's weakest link. The position of the weakest link is not fixed but remains in transition, depending on the circumstances. Therefore, it is always important to keep reviewing the system so that one can determine any possible weak links (Trojanowska and Dostatni, 2017).

Figure 3: TOC management-focused summary
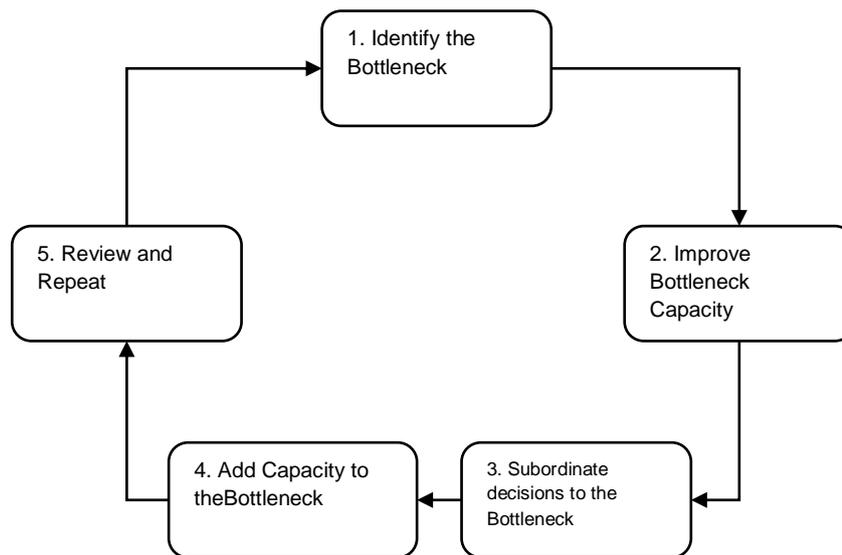
IV. Total quality management (TQM)

The main objective of addressing constraints is to enhancethe performance and productivity of a firm. The total quality management (TQM) paradigm is the most appropriate metric tool to optimise organisational-level quality and productivity. Most TQM policies are aimed at quality management and customer satisfaction (Prajogo and Cooper, 2017).Prajogo and Cooper (2017) find is a positive correlation between the implementation of TQM policies and the increased competence of employees. These guidelines empower employees,so that they work towards organisational goals without much supervision. The motivation to work towards company objectives is intrumental in bettering the productivityof autonomous remote workers.Moreover, the operational choices these employees are likely to make at different levels would be consistent with the values and objectives of the management of an organisation as well as its business strategy (Ferdousi *et al.*, 2018).

TQM can enhance regular and frequent communication about important changes in an organisation with remote employees, improving their skills continuously to aid them in managing their tasks successfully. Most firms usually use the traditionally accepted methods of communication, such as emails.Yet, there are other channels that can be used. Smith, Patmos and Pitts (2018) suggest that organisations should start encouraging the use of the common yet informal channels of communication, such as instant messging (WhatsApp, Skype, Google Hangouts etc.), claiming that this approach would make it easier for coworkers to communicate, which may in turn increase knowledge-sharing initiatives (Mulen, Baalen, Heck and Mülder, 2019). In addition, it would be easier for remote workers to connect with the management of their organisation. Smith, Patmos and Pitts (2018) advise organisations to use a mixed strategy composed of face-to-face and virtual approachesin order to enhance communication effectiveness. They suggest that remote workers should handle some of their tasks in the office space several times in a month. Golden and Raghuram (2010) and Greer and Payne (2014) further state that face-to-face communication expounds the message shared through cues, the tone of voice, expressions and gestures. In addition, people can develop interpretations that allow them to bridge the periods in which they are away. According to Golden and Raghuram (2010), one does not need much time to understand a message that is communicated face-to-face. In fact, brief interactions such as lunches and hallway interactions are enough to get a message across and reinforce feelings of attachment.

Improving organisational effectiveness through TQM can be enhanced by evaluation using the Baldrige Award framework. This strategy 'codifies the principles of quality management in clear and accessible language' (Karimi, Safari, Hashemi and Kalantar, 2014),which makes it easier to evaluate an employee's involvement in organisational affairs and customer satisfaction.The major advantage of the Baldrige Award framework is the inclusion of many quality metrics that paint a better picture of organisational effectiveness (Karimi, Safari, Hashemi and Kalantar, 2014). Performance evaluation starts with self-assessments based on seven categories of concepts and values. Satisfactory results warrant third-party evaluation to confirm whether the outcomes are consistent. The five categories measuredare the following: (1) 'product and process outcomes', with 120 pts.; (2) 'customer-focused outcomes', with 90 pts.; (3) 'workforce-focused outcomes', with 80 pts.; (4) 'leadership and governance outcomes', with 80 pts.; and (5) 'financial and market outcomes', with 80 pts

(Neyestani and Juanzon, 2016).TQM metrics can evaluate the impact of the various types of FWAs that an organisation can start offering to its workers, specifically on organisational effectiveness and performance. The abovementioned frameworkincludes strategic quality planning, process-quality management, HRM and analysis and information (Figure 2).

Figure 2: Baldrige Award Framework

V. Implications

Addressing the bottlenecks associated with flexible working arrangements could be imperative in improving individual and organisational productivity.Bloom *et al.* (2015) found that working from home increased the productivity of a Chinese firm by 13% in nine months. The increase was attributed to more working hours and little or no breaks during the working periods. The workers interviewed unanimously stated that working from home made them more relaxed, as they could access tea, lunch andtoilets with ease, for example. Further experiment shows that increasing the number of remotely working employees has increasedproductivity by a factor of between 20%–30% and has saved the organisation $2000 of operational costs per employee(Bloom *et al.*, 2015).The results also indicate that the quality of work done by the remote employees did not change at all. Further, de Menezes and Kelliher (2016) confirmed that both formal and informal flexible working arrangements improve the individual performances of remote workers, which is also reflected in the overall organisationalproductivity.Although organisations may have flexible working policies, informal practices are negotiated on an individual basis. The informal arrangements are strategies that organisations use to respond to their employees' needs, to show them that they care about them. Employees in need usually approach their supervisorsto inform them about situations that may require them to report to work late, leave earlier, take breaks during work hours, or go away for a certain period(de Menezes and Kelliher, 2016). Although these issues may be covered by organisational policies, employees must not fill out the forms or draft letters required in informal arrangements as discussions with the managers or supervisors is enough.

Job satisfaction is the most significant element in improved individual and organisational productivity. Flexible working arrangements allow remote workers to address possible work-life conflicts. Kim and Gong (2016) and Fiksenbaum (2014) affirm that conflicts related to work-life and family-work are common among married workers – the two dyadsare probably the most important relationships most employees, as they cannot engage with one without considering the other. It is usually a challenge for most workers to strike a healthy work-life balancesuccessfully. Chen and Fulmer (2017) claim that work-life conflicts influence employees'attitudes towards their employers. If they feel that an organisation does not care about them, they are likely to not remain committed to its organisational objectives (Lee, Back and Chan, 2015). Eventually, they are likely to become less productive, which could manifest in poor firm performances. Kim and Gong (2016) claim that managers and supervisors can play a major role in mediating family- and work-related responsibilities. Supportive supervision and management can significantly reduce the need for FWAs, even for female employees. In addition, employees should try and maintain positive attitudes towards their supervisors and organisations, which can enhance their commitment (Chen and Fulmer, 2017).

Many organisations are increasing organisational commitment by offering various types of flexible working arrangements, such as on-site childcare, flexible work schedules (flextime), compressed work weeks, telecommuting, job sharing, part-time work, or leaves of absence/sabbaticals (Fiksenbaum, 2014). Some firms are allowing employees to create their own schedule, which allows them to balance family and work issues (Dizaho, Salleh and Abdullah, 2017). Workers who believe that they have control over their schedule tend to be more committed to a company's goals, as observedby Prajogo and Cooper (2017). This belief leads to improved individual productivity and job fulfilment, which in turn boosts work quality (Cooper and Baird, 2015; Thompson, Payne and Taylor, 2015).Most married employees need flexible working arrangements at some

point, especially when they give birth. Women may require such arrangements more than men, since they have may usually more roles to play, as they might be expected to care for their newborn childreneven while doing other household chores (Troup and Rose, 2014). Most women preferto continue working during theirchild-bearing years,regardless of their organisational positions(Subramaniam, Overton and Maniam, 2015). Their main motivation comes from autonomy and less commuting time,which enables them to save enough time for familial and personal issues. Today, men also want to be actively involved in the upbringing of their children and may devote more time toward homeactivities (Troup and Rose, 2014).According to Doble and Supriya(2010), men and women employees both state that working from home andthe provision of childcare services at the work could prove significant in averting work-life conflicts. These findings are consistent with the common employee preferences of integrating work with familial life and vice versa (Daniel and Sonnentag, 2015). The provisionof flexible working arrangements smoothens work-life balances, which eventually helps employees meet their job and personal expectations (Michel and Michel, 2015; Hasan and Teng, 2017).

There is a positive correlation between one's quality of life and job satisfaction and organisational commitment(Lee, Back and Chan, 2015).Quality of life is a complex aspect that includes social, self-esteem, health- and safety-related, economic and familial, self-actualisation and aesthetic needs (Lee, Back and Chan, 2015). Ciarniene and Vienazindiene (2018) find that employees appreciate flexible working arrangements since those reduce stress and improve mental and psychological wellbeing as well as general health and wellbeing.Members of the two generations(cohorts)who participated in the study claimed that the autonomy to make personal and work-related decisions reduced the stress and pressure to deliver on the two important abovementioned aspects (Ciarniene and Vienazindiene, 2018).Similarly, Brummelhuis*et al.*(2012) states that 'News Ways of Working'strategies reduce the exhaustion that is common in most traditional work arrangements. Consequently, those who work remotely are likely to enjoy better psychological and mental health, which is one of the major indicators of an improved quality of life. Employees who associatea better quality of life are likely to remain with their current employers for longerperiods (Lee, Back and Chan, 2014).

Many organisations around the world have realised the importance of attracting and retaining the best talent through flexible working arrangements. Brunia, De Been and van der Voordt (2015) assert that the provision of flexible working arrangements is considered as a best practice,associated with increased job satisfaction among employees and better performance in many organisations today. The need for flexible work arrangements stems from the changing population dynamics at present. Idris (2014) states that 'generation Y' is among the most influential factors that influence organisational change in recent times. These young people, as it were,want to work while furthering their education and simultaneously balancing familial and personal issues. Other issues include diversity,referring to the inclusion of more women and people living with disabilities (Idris, 2014). Providing this unique generation with flexible working arrangementsencourages them to make contributes to some organisations while disregarding others. Indeed, employeestend to become even more committed to an organisationif it introduces flexible working arrangement plans. Brunia, De Been, and van der Voordt (2015) state that the nature of such arrangements varies depending on the needs of individual employees. Some prefer to choose from flexiplace, flextimeand hybrid systems combining the two. In summary, all FWA approaches make employees more committed to organisations, despite their variations.

Choo, Desa and Asaari (2016) divide commitment into the following: affective, in which employees and organisations share a common goal; continuance, in which employees are willing to continue working with their employer; and normative, in which employees feel obligated to remain with their employers for a longer period. Chen and Fulmer (2017) assert that affective commitment greatly influences the relationships between employees and organisations, claiming that several employees consequently feel that they share the same beliefs, vision, mission and values with an organisation. They further assert that there is a high correlation between organisational and employee-related outcomes, such as attendance, performance and organisational citizenship (for the former) and stress and familial conflicts (for the latter). Affective commitment can influence employees to work harder in order to enhance organisational valuesand performances(Choo, Desa and Asaari, 2016). In such cases, employees can work without any supervision, since they understand the given organisational goals well,along withthe actions they must take to contribute to them. Continuance commitment, associated with benefits that employees can avail because of the investment they have made in an organisation, also plays an important role in enhancing employee performance. Employees who have worked for a longer time and have gained a higher statusin an organisationare usually unwilling to leave it. They understand that such an action would invalidate the benefits they have accrued, such as pension and experience (Choo, Desa and Asaari, 2016). Both affective and continuance commitment can make an employee feel obligated to an organisation; they may not think about leavingeven if they get better opportunities elsewhere. These employees tend to work harder and provide the stability required to enhance an organisation's value, performance and productivity (Choo, Desa and Asaari, 2016).

Flexible working arrangements attract individuals who may need such plans in the future (Thompson, Payne and Taylor, 2015). It is important for organisations to notify their employees that they have the option of

requesting for such arrangements if needed. Cooper and Baird (2015) assert that organisations should allow employees to request flexible working arrangementswheneverrequired.However, it is up to the management to ensure that employees understand the reasons behind such provisions and what they entail. In fact, Cooper and Baird (2015) noted that most of the employees in the two case studies they discussed did not know about the 'right to request FWA' policies', while those who knew it were alsoaware of what it entails (Cooper and Baird, 2015). Organisations should invest ample resources in spreading awareness and knowledge about FWAs as the primary way toenhance job satisfaction. They can provide in-house training programs to ensure that all employees understand FWAs, their importance, how they can be requested and how one can adjust to maintain/enhance productivity. Such an approach may be more important in organisations that employ more women employees. Moreover, women are likely to need flexible arrangements when they start having children. However, this does not mean that the satisfaction of male employees should be disregarded; they may also need FWAs, depending on their needs.

Although many organisations understand the benefits of FWAs, some have not implemented them yet. Sweet, Pitt-Catsouphes, Besen and Golden (2014) found that a majority of the 545 employers they surveyed did not offer flexible working arrangements to their employees. They also noted that organisational structures dictated whether a givenmanagement team was willing to implement FWAs. Indeed, highly bureaucratic organisations are unlikely to implement such policies, since they usually follow traditional organisational structures. On the other hand, relatively flexible organisations are likely to implement FWAs faster (Sweet, Pitt-Catsouphes, and James, 2017). In addition, larger organisations are more likely to offer flexible terms compared to smaller ones. Organisations also offer/fail to offer flexible arrangementsdepending on the attitudes of their managementteams (Sweet, Pitt-Catsouphes and James, 2017). Open-minded managers are more likely to implement these programmes, unlike the conservative ones. Further,women managers are usually more open to advanced flexible working arrangements as compared to their male counterparts. Similarly, younger managers are more likely to support and implement FWAscompared to the older ones (Sweet, Pitt-Catsouphes and James, 2017).

VI. Conclusion and Recommendations – Proposed Guidelines regarding theManagement of Remote Employees

This study has contributed to relevant literature by identifying the bottlenecks in the productivity of remote employees that remain overlooked. It has also showedwhy and how organisations fail to implement FWAs, despite understanding the potential benefits these arrangements have. Additionally, it has provided solutions in line with the important practical guidelines of the Baldrige Award framework relating to TQM and TOC, as detailed below:

Step 1: Recognizing the weakest link:
1) Always keep track of the slowest link in terms of delivery. The term 'slow' does not refer to an individual worker's efficiency, but rather to the efficiency of that part of the chain that is consuming the most amount of time.
2) Keep track of the next weakest link, because upon removal of the first constraint, the process above will need to be repeated to find the next weakest link.
3) Track the pace of output.
4) Clearly document the changes in the involved processes and procedures while sharing them with the managers responsible for ensuring product quality or productivity enhancement.
5) Implement parallel processing where feasible, particularly if the constraints of the weakest link are schedule-related and not work quantity-related.
6)

Applying this to a business that is building a new website, the slowest part of the chain might be identified as the element design, which holds up the development and testing phases of the sequential chain of tasks.

Step 2: Improving the existing capacity of bottlenecks:
1) The workload created by a bottleneck should be reduced by eliminating the additional tasks that the workers are required to complete along with their core tasks.
2) Set short-term goals and ensure that they are clearly communicated to ensure the maintenance of high quality at the end of the process. Faulty delivery can be minimised by placing checks at various stages within the weakest link, to minimise the need for revisions.
3) Maximise the utilisation of the weakest link. For instance, if the link is a particular worker, it might be beneficial to assign her/him extra work hours per day to minimise the total number of days she/he spends on a task. Although the cost may be identical regarding points two and three, adjusting the former may end up

improving the throughput of the overall system. In some cases, paying a premium for the formermay prove to be cost-effective.

4) Ensure that bottleneck workers are always working on the most crucial unit or order, rather than the most recent or the current order. Bottleneck efforts must be prioritised to ensure maximum returns on investment.
5) Scheduling the working hours of employees who are the most efficient as per the time during which they are most efficient. For instance, workers are usually more efficient in the first half of a day.
6) It may be beneficial for organisations to consider a unique reward-and-penalty structure to prevent a dip in product quality by setting and offering task-based penalties and bonuses, respectively. These incentives should be directed toward faster delivery and the minimisation of quality issues. Although such incentives may be unnecessary for non-bottleneck employees, they are likely to prove beneficial.

> Applying the above step to the website example, the capacity of the bottleneck in design may be corrected by delegating smaller task elements (e.g. image processing and branding concepts) to others.

Step 3: Subordinate every other decision to the bottleneck:
1) Where multiple units are being produced by a system on an ongoing basis, ensuring that non-bottleneck employees are producing at the same rate or at a slightly higher rate than the weakest link in the chain could be effective.
2) Wherever employees are capable of working across divisions, their efforts should be redirected, wherever possible, to working on bottleneck tasks.
3) Budgets should be prioritised toward bottlenecks rather than toward enhancing or updating non-constraint processes.

> Applying this to the website example, developers could be asked to pitch in on the design side, or pages could be coded as delivered in an iteration method, to ensure that every capacity is utilised along the chain.

Step 4: Add capacity to the bottleneck:
1) Organisations may also look to minimise the risk arising from the needs of more employees by having backups available and using contractual arrangements that reduce the frequency of such occurrences.
2) Backup employees can help manage high workloads when either primary employees are unavailable or larger-than-usual amounts of work have to be handled.
3) Workers must have access to appropriate technology (e.g. software tools) so that the speed of delivery can be optimized.
4) Examine the process implemented at the bottleneck and constantly seek to optimize operations by removing the identified inefficiencies.

> Step 4 can be applied to the website-design problem by adding designers or automating some of the design tasks to relieve the design bottleneck.

Step 5: Review and repeat
1) Organisations must maintain accurate records of the recurring bottlenecks in staged projects involving remote employees.
2) The productivity, inventory and operating costs as well as the rate of output at each of the sequential and parallel processes (with fluctuations) must be tracked.
3) These metrics should be regularly reviewed to improve a given system as a whole. The process should be repeated whenever the capacity of a bottleneck improves, because different components of a system become the weakest link, as mentioned before.

> With the website example, regular reviews should be organised by a given business (i.e., weekly, bi-weekly, or monthly) so that managers canstay aware of a bottleneck and be informed about how well the corrective measures are working. This should also create an awareness of the next weakest link in the chain.

VII.   Conclusion:

This studyanalyses the effects of bottlenecks on the productivity of remote employees. It determines that working remotely increases the productivities of both employees and organisations. Most employees can do more as a result, since they are able to balance their time well and are even enabled work outside normal office hours. Moreover, they get to spend more time with their families, which reduce work-life conflicts and increases job satisfaction levels. However, working remotely can also lead to other bottlenecks, due to loneliness,

distractions from urgent family issues and the lack of work discipline at home. Such issues may have serious consequences on firm performance, especially in cases where work is sequential. In this light, this studypresents a list of TQM and TOC guidelines that can improve team-level productivity when remote employees work on sequentially dependent tasks. The proposed guidelines will be important to professionals and researchers who seek to minimise the quality and productivity problems caused by bottlenecks in organisations. They can be applied universally in most industries,albeit with some adjustments depending on the specific industrial or national contexts.

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