Long Working Hours do not increase your Team Productivity: Solutions to limit the effects of overtime on employee's productivity in a project organization[1, 2]

Camille Timmerman

ABSTRACT

Nowadays, companies are structuring themselves into project-oriented organizations in order to gain a competitive advantage. Employees with specific expertise have to continuously adapt their ways of working while looking for the highest productivity. Consequently, working overtime is becoming a norm in many companies to fit into the project requirement. The paper researches aims to find a solution to help the project manager to limit employee's overtime while keeping a high productivity. To better understand this phenomenon, we looked at the root causes of working overtime in a business environment. Based on several studies and experimentation we came up with four possible alternatives that could be implemented to solve the issue.

To correctly assess our findings and support our thinking we used different methods of quantitative and qualitative analysis. One solution has been selected and developed here, employees have to have regular breaks and need to disconnect from technologies and work during lunchtime in order to improve their productivity. In that case, they will not need to work overtime. Leaders of organizations and businesses can use the findings of this study to develop new ways of working and better manage time to overcome the effects of overtime in their team.

Keywords: Productivity, working hours, overtime, overwork, project-oriented organization, technology, career perspective, health issues, working condition.

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[1] Editor's note: This paper was prepared for the course "International Contract Management" facilitated by Dr Paul D. Giammalvo of PT Mitratata Citragraha, Jakarta, Indonesia as an Adjunct Professor under contract to SKEMA Business School for the program Master of Science in Project and Programme Management and Business Development. http://www.skema.edu/programmes/masters-of-science. For more information on this global program (Lille and Paris in France; Belo Horizonte in Brazil), contact Dr Paul Gardiner, Global Programme Director, at paul.gardiner@skema.edu.

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INTRODUCTION

Everyone once said that there was not enough time in a day to complete all the tasks they have on their to do-list. We all want to seek a good level of productivity, to get a well-deserved promotion but also to fulfill our responsibility towards loved ones. We put a lot of energy into controlling our behavior to be more efficient in order to adopt a good balance between our professional and private life. This is even truer in a project-oriented-organization "when employees have to hold a number of portfolios of projects because projects are constantly changing, permanent and temporary resources are employed, and cooperations are sometimes organized in virtual teams" (PMI, s.d.)[3]. This often forces employees to work longer than the 8 regular hours and in the worst-case scenario, to work overtime to accomplish the duties. More than ever, permanent contracts or 9 to 5 working hours seems to be the vestige of a bygone era.

Nowadays, this norm of 8 working hours is pushed to its climax. In many projects, overwork has become a standard and sometimes an integral part of the corporate culture. Working long hours has become something expected and even admired by managers. In most common mind long working hours are synonymous of high productivity, there is a real confusion between working hard and working longer. "New technologies, despite multiple interests, are a new source of insidious stress that is expensive for the human body, but also very expensive for businesses" (Fleming P. , 2018) [4]. The first beliefs about technology were that they released us from certain tasks or made them faster and thereby increased employee productivity. Indeed, many economists in the early twentieth thought it was legitimate to rely on technical progress to free us from work and predicted that advances in technology would reduce the number of hours worked.

Several studies on working habits revealed that working long hours can have a dramatic impact on health. For example, in 2015, a young Japanese employee of 24 years old was found dead after 105 hours of overtime in the same month. Japan is facing a « death by overwork » problem [5].

Moreover, several studies have been conducted by governments on the relationship between working hours and productivity. The challenge of most companies is now to find the right balance between employee's well-being and highest performance at work.

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[3] Gareis, R. (2000). Program management and project portfolio management: new competences of project-oriented organizations.

[4] Peter, Fleming (2018, January 15th). The Guardian: Do you work more than 39 hours a week?

[5] Jeremy, Berke. (2018, March 25th) Business Insider: Japan is facing a « death by overwork » problem.

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To understand why so many people are working overtime, we have to go through the main causes of this phenomenon. The mains reasons for failures come from management methods, environment, and measurement.
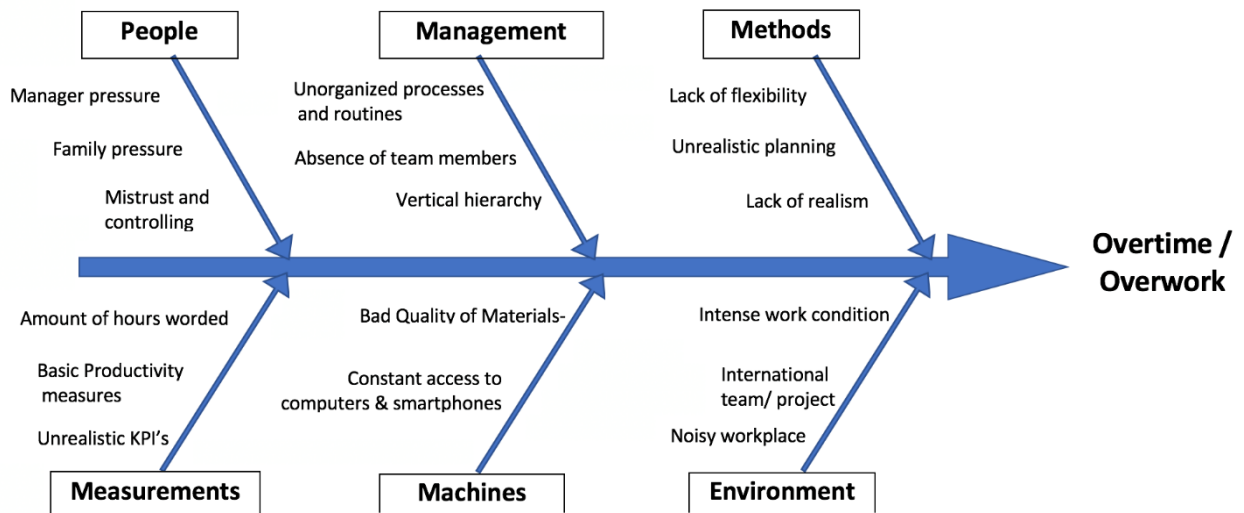

Table 1 – The Root Cause Analysis: Fishbone Diagram[6]

First, inefficient **working methods** are one of the reasons that lead to high pressure on employee's performance. For example, the company can have very inflexible rules, unorganized processes and a general lack of realism in the way projects are realized in terms of deadlines, planning, and cost.

Second, the general environment of the company the can push employees to work overtime. Doing extra hours can be related to an **international business structure** or a noisy workplace but most of the time it is intrinsically related to the corporate culture of the company. Some companies decided to provide employees with a large number of benefits and facilities in order to take a bigger space in their lives and therefore employees are working longer hours.

Finally, the last reason why employees work overtime is that the **worker's productivity** is still largely calculated according to the number of hours he or she spends working.

The first objective of this paper is to identify the main causes of overtime and to demonstrate that overtime can be counterproductive for the project. The second objective of this paper is to discuss several alternatives that could increase productivity and allow the project manager to better manage time.

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In order to analyze the relationship between productivity and working hours, we will be able to answer the question:

What can an employee do to limit working overtime while keeping a good productivity level in a project-oriented organization?

METHODOLOGY

Step 1 – Problem identification

Employees working in a project-oriented organization have to fit in the new project structure and adapt themselves to a new team, a new project manager, new responsibilities and new ways of working. As a result, employees are often forced to work overtime in order to successfully achieve the deliverables of the project.

- What can an employee do to limit working overtime?
- What can a project team do to increase productivity?

As mentioned in the root cause analysis, three main factors lead to overtime work in a project.

- Unorganized processes and bad time management[7]

The work environment and the methods used to run the project are responsible for bad time management. Project complexity, unorganized processes and noisy workplace are classic causes that lead a team to work overtime.

- Management pressure and wrong career perspective

According to old common beliefs, if an employee spends long hours in the office the probability of getting a promotion increases. In some cases, a manager may consider this to be a sign of devotion. In other cases, it could just be a sign of poor or inefficient time management, which is not a good sign of work quality. Now, if we only take into account the performance of the team members, overtime doesn't necessarily lead to better productivity and on the contrary creates mistakes, tiredness and a loss of motivation. A study conducted by two American researchers from

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[7] Isabelle, Salemme. Pipefy Blog. Are unorganized processes haunting your team's productivity?

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the University of Cornell shows that the implications of overtime work and work intensity affect the well-being of the employee and his or her career perspectives[8].

- ▪ Employees are always reachable [9]

By making us more productive, technologies have also broadened our area of expertise and made our work extremely accessible. Technological progress has radically changed the working environment and increased our flexibility toward jobs. Today it is possible in a few seconds to have access to work at any time and almost anywhere. Unconsciously, people work much more than before due to the democratization of internet access, overtime is not necessarily done in the office. "In 2002, fewer than 10% of employees checked their work email outside of office hours. Today, with the help of tablets and smartphones, it is 50%, often before getting out of bed » (Fleming, 2018). Work interferes with our private lives, increases our stress level and not only has an impact on our health but also on our well-being and productivity.

Step 2 – Feasible alternative solutions to the problem statement

We are able to select some possible alternatives that will improve the team well-being in the project-oriented organization with shorter working hours while keeping a high productivity level. Each of the alternatives listed below come from scientific studies or experimentation conducted in a professional environment.

1. Team members need to have regular breaks during the workday: studies have shown that 17 minutes break every 52 minutes is good for overall efficiency.

2. Disconnecting from any type of technology (smartphones, television, computers…) during breaks, especially during lunch breaks.

3. Reducing working hours from 8 hours to 6 hours while being paid equally.

4. Lengthening the work week to 6 days in order to limit overtime while keeping a high productivity level

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[8] Avgoustaki, A. & Frankort, J. (2018). Implications of work effort and discretion for employee well-being and career-related outcomes: an integrative assessment.

[9] Peter, Fleming (2018, January 15th). The Guardian: Do you work more than 39 hours a week? Your job could be killing you.

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Step 3 – Development of the feasible alternatives

The first alternative to the problem raised is that the employee needs **to do regular break during the workday**. A recent study by the Draugiem Group a Latvian social networking company came up with a breaking news, the most productive employees aren't the one who stays long hours in the office. Indeed, to be more productive, this company came up with this statement17 minutes break is needed every 52 minutes of work in order to refresh the brain and work smarter [10]. This study reveals that employees who are taking often breaks and do not work the full 8 hours per day are the most productive ones. By organizing work and encouraging employees to take breaks on a regular basis, the company can benefit from increased productivity. It is up to the project manager to introduce breaks as an element of productivity in his team. As it is a one-time event, managing people in a project environment is very challenging in terms of motivation, reward, and well-being of the team members[11].

The second alternative is that employees need **to disconnect from work and technologies during the break** and it is even more important during lunch break. The University of Toronto published a study in 2014 on lunch breaks patterns. John Trougakos an associate professor of organizational behavior and human resources management came with the conclusion that the absence of a proper lunch break can cause greater fatigue and lower worker productivity. The experimentation showed that employees who haven't spent their break on computers, checking email, or doing business lunches had better results than others in terms of productivity. All effort to perform and focus on the work, need a psychological energy that is tiring and ones this energy source are in short supply, workers do become less and less efficient [12].

The third alternative is to **decrease the number of the regular working hour from 8 hours to 6 hours**. A serious experimentation undertaken in a retirement home in Sweden showed great results in terms of productivity. For a year, nurses worked 6 hours a day instead of 8 hours with the same salary and this reduction of daily working hours produce a real cultural shift in the workplace and have radically change the rest homes in a more humane place. The administration noticed that by reducing the working hours, they have also reduced the number of sick leave. In general, the employees felt less stressed and efficiency increased in this retirement home [13].

The last alternative is **to lengthen the work week from 5 to 6 working days**. Taking facts, if employees in a project-oriented organization are not able to perform their tasks on a 5 days' work week and that they are sometimes forced to work overtime, we could suggest extending the work

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[10] Lisa, Envans. (2014) Fast Company: The exact amount of time you should work every day.

[11] James, William (2015 September). Planning Planet: What is the purpose of managing people?

[12] Dana, Warren. (2016, June). DMW Coaching: Why a lunch break will increase productivity in your organization?

[13] Philip, Oltermann. (2017, January 4th). The Guardian: Sweden sees benefits of six-hour working day in trial for care workers.

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week to 6 working days while decreasing the number of hours worked per work day. This alternative will have the effect of reducing and even eliminating overtime, however, its effect on employees' productivity is more mitigated. Some researchers have shown that productivity in the workplace varies depending on the day of the week[14]. Indeed, physical and psychological factors influences an employee's ability to concentrate and therefore to be more productive. In general, productivity is at the lower point at the beginning of the week, Monday, and at the end of the week, Friday. For the first, it is the result of a lack of motivation and for the second it is fatigue from the week work. In the first instance, it is clear that weekend working is generally not preferred by employees because it is unsocial hours and that it does not fit with their personal life.

Step 4 – Selection of criteria to accept or reject alternative solutions

To decide which of the four alternatives appears to be the most appropriate in a project management context with the best benefits for productivity, we need to use a Multi-Attribute Decision Model (based on satisficing requirements) analysis with the non-compensatory method of Dominance. This model will allow making a ranking of the different alternative to see which alternative could best improve employee productivity and at the same time reduce overtime work.

The criteria which seem the most relevant to discuss are the following ones:

- **The cost for the organization** with the chosen alternative**:** we will need to take into account the cost of implementing such alternatives in a project-oriented organization. Reducing working hours or establish regular breaks can have consequences on the overall cost of the project.

- **The time saving** with the chosen alternative**:** time is considered here as an opportunity for the organization but also for the team.

- **Change needed in the organization** with the chosen alternative: we will need to measure and document the changes that the alternative will bring in terms of a new way of working in the project management team.

- **Fit for purpose in the project organization** with the chosen alternative: is the alternative easy to implement in a project-oriented organization?

It is important to establish a **Time-Cost Tradeoff** [15]. The level of acceleration of the project depends mainly on validations given by the organization. It is possible that the project requires additional resources, multiple teams, overtime and scope review. The level of schedule

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[14] Alex, Bryson and John, Forth (2008, June). LSE Research Online: Productivity and days of the week.

[15] Jagannath, Mallela and Suri, Sadasivam. (2011, December). Work Zone Road User Costs: Concepts and Applications

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acceleration depends on the level to which the contractor deploys additional resources, multiple crew shifts, overtime work, and supervision. The faster the validation of project milestones and the shorter the project duration, the lower the cost.

	Alternative 1. Break of 17 minutes every 52 minutes	**Alternative 2. Disconnect from work and technologies during lunch breaks**	**Alternative 3. Working a maximum 6 hours per day**	**Alternative 4. Lengthening the work week to 6 working days**
Cost	Excellent	Excellent	Poor	Poor
Time	Fair	Fair	Fair	Poor
Change in the organization	Fair	Excellent	Poor	Poor
Fit for purpose	Excellent	Fair	Fair	Fair

Table 2 – Multi-Attribute Decision Matrix [16]

The table is filled in with a color code and qualitative attributes, as follow:

- A green score indicates that the attribute has an excellent impact and will help to limit working overtime while enhancing employee overall productivity. Both organization and employee will have benefit from this solution
- A yellow score indicates that the attribute has only a fair impact and will mostly be beneficial to the employee.
- A red score indicates that the attribute has a negative impact on either the employee and the organization and signify that it is the worst concerning our main problem.

We will justify the alternative-attribute score:

1. Team members need to do regular breaks during the workday

The overall score for this alternative is good because there is two yellow score for time and change and two green scores for cost and fit for purpose. As we said earlier, it is the role of the project manager to organize work and in this particular case to implement regular breaks which will need some changes in the team ways of working but will not have an impact on cost. However, doing regular breaks can longer the working hours and could increase the time employees spend on their

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workplace. Thus, it could have impacts on the team overall wellbeing with a more unbalance life between private and professional life.

2. Disconnecting from any type of technology (smartphones, television, computers…) during breaks, especially during lunch breaks

The overall score for this alternative is excellent with only one yellow score for fit for purpose. Indeed, disconnecting from work and technologies during lunch break is easy to say but much more difficult to implement for a long term. Discussing work in an informal mode during lunch is good for the social links in a professional environment. On one hand, it contributes keeping a good atmosphere in the team and offer the opportunity to get to know better direct colleagues. On the other hand, informal chats offer the possibility to develop new ideas for the projects and can help to find solutions, as your colleagues master other expertise.

3. Reducing working hours from 8 hours to 6

The overall score for this alternative is poor. Indeed, reducing by 2 hours the number of hours worked will have necessarily have a huge impact on cost and change for the organization. Such working practices are hard to implement in a project-oriented organization as at the end of the project team members are returning to their business unit with a line manager. For this alternative to be viable, it cannot only be implemented in the project team but must be implemented throughout the organization.

4. Lengthened the work week to 6 days in order to limit overtime while keeping a high productivity level

The overall score for this alternative is bad. First, lengthening the work week has a big impact on the cost, the company must pay its employees one more day. Second, for this alternative to be viable, it cannot be only implemented in the project team but must be generalized throughout the organization and therefore creates a huge confusion in the company. Third, studies have shown that employees were less willing to accept working on weekend days and that they will be less efficient. As we have shown above, this alternative only answered a part of the problem exposed, which is, overtime but will not really improve productivity.

For the alternative to be acceptable, it has to have a minimum of two red coded attributed. Considering this table, we can already eliminate the alternative "Lengthening the work week to 6 working days" which have three red codes.

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FINDINGS

Step 5 – Development and outcomes for each alternative

In previous steps we have identifies the causes that lead team members to work overtime in a project-oriented organization and we have established four possible alternatives that could at the same time reduce overtime and increase employee productivity. We begin our analysis of the alternatives by a reminder of what is productivity at a corporate level. "Productivity is the measure of how specified resources are managed to accomplish timely objectives as stated in terms of quantity and quality. Productivity may also be defined as an index that measures output (goods and services) relative to the input (labor, materials, energy, etc., used to produce the output) » (Gerhard, s.d.)[17]. According to Investopia it is « calculated by measuring the number of units produced relative to employee labor hours or by measuring a company's net sales relative to employee labor hours. »[18].

The objective of this paper is to find the most appropriate alternative that will allow the employee to better manage time which will reduce the number of overtime hours and will result in better productivity for the project.

In step 4, we have already eliminated the alternative number 4 because it would have implied too much organizational change, additional charges (wages) and would have impacted the motivation of employees, thus, their productivity.

Now, we need to compare the three remaining alternatives and to rank them. In order, to find which alternative is the best for the project team, we will provide a quantitative analysis with the relative weighted technique. To obtain this quantitative analysis, we are keeping previous attributes, converting the color code and qualitative classification into a quantitative analysis.

To be able to process, we need to use a weighted technique. We consider this conversion:

Attribute	Score
Excellent	1
Fair	0,5
Poor	0

Table 3 – Conversion Table[19]

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[17] Anthony, Inman. Revised by Gerhard, Plenert. Reference for Business: Productivity concepts and measures.

[18] Investopia, Business Productivity definition. https://www.investopedia.com/terms/p/productivity.asp

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The table below indicates the final score of each attribute related to the possible alternatives:

Attributes	Alternative 1. Break of 17 minutes every 52 minutes	Alternative 2. Disconnect from work and technologies during lunch breaks	Alternative 3. Working a maximum 6 hours per day	Alternative 4. Lengthening the work week to 6 working days
Cost	1	1	0	0
Time	**0,5**	1	0,5	0
Change in the organization	0,5	1	0	0
Fit for purpose	1	0,5	0,5	0,5
Total	3	3,5	1	0,5

Table 4 – Quantitative analysis [20]

The quantitative table definitely confirmed us that we can delete the alternative number 4, but we can also eliminate the alternative number 3 "working maximum 6 hours per day "because the score is 3 times lower than the alternative number 1.

To better rank the two last alternatives, we need to use an additional weighting model. Indeed, this last weighting technique is essential because we need to find the best solution that will bring efficiency to the project team and added value to the organization.

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Attributes	Step 1	Step 2			Alternative 1		Alternative 2	
	Relative rank	Normalized weighted (A)			(B)	(A) x (B)	(C)	(A) x (C)
Cost	1	1/10	=	0,10	1	0,10	1	0,10
Time	4	4/10	=	0,40	0,5	0,2	1	0,4
Change in the organization	2	2/10	=	0,20	0,5	0,1	1	0,2
Fit for purpose	3	3/10	=	0,30	1	0,3	0,5	0,15
Total	10		SUM	1,00	SUM	0,7	SUM	0,85

Table 5 – Additive weighting model[21]

In the table above, we can see the ranking of the chosen attributes. **Cost** is a fundamental factor in every organization within the decision-making process. Here, it is the most important attribute because knowing the cost allow the project manager to evaluate the possible alternatives in order to plan futures activities[22]. **Change** needed in the organization is the second attribute that will impact the business. The alternatives suggested in this paper will have more or less a strong impact on the organization and they will require more or less a strong change effort on behalf of the top management. Indeed, there is nothing more doubtful than initiating a new strategy or working processes in a running project team.

Fit for purpose is the third attribute in terms of importance. We must analyze the alternatives and identify those that are best adapted to the current management method, the scope of the project and the core team mobilized on the project. In addition, we must see if the new solution is adaptable to the entire company. Indeed, some of the alternatives can not only be implemented for the project entity but must fit the company in a global way. The last attribute is **time** because it is here seen as an opportunity. Each alternative will more or less bring added value and save time for either the project team and the organization.

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[21] By Author

[22] Gheorghe, Lepădatu. The Importance of the Cost Information in Making Decisions.

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Step 6 – Selection of the preferred alternative

From the quantitative analysis, we can notice that alternative 2 is better than the alternative 1 because it has a higher score.

Yet, we need to use a ratio scale to demonstrate our result, so we are sure it is the best one:

3,5/3 = 1,17 and 1,17 x 100 = **117%**

We can conclude the alternative 2 "**Disconnect from work and technologies during lunch breaks**" is 117% better than the alternative 1 "**Break of 17 minutes every 52 minutes**".

Now if we take into account the importance of the specified attributes and use the additive weighting model of Table 5, we are considering 0,85/0,7= 1,214 and 1,214 x 100 = **121%**. Here we also identified the second alternative better than the first one.

Ranking order	Color code	Alternatives
1		Disconnect from work and technologies during lunch breaks
2		Break of 17 minutes every 52 minutes
3		Working a maximum 6 hours per day
4		Lengthening the work week to 6 working days

Table 6 – Alternative ranking table[23]

Step 7 – Performance monitoring and post evaluations of results

In previous steps we have exposed and analyzed several solutions that could help a team of a project-oriented organization to limit working overtime by being more productive on regular working hours. The use of a multi-attribute decision model based on satisficing requirements helped us to assess the alternatives in a quantitative model. According to both tables, we can assume the second alternative disconnect from work and technologies during lunch breaks" is recommended to solve the thesis problematic.

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CONCLUSION

Project-oriented organization is emerging in many sectors as it can be a strategic resource for the company. However, many managers in POO's still have some difficulties to structure and manage properly the work for their team. Employees have to adapt themselves from their normal entity to be integrated into a new project entity. They have to face new ways of management, a new authority and new methods of working. Apart from leading a successful initiation, planning, execution, monitoring, control and close of the project, the manager is also in charge of the well-being of his team. On their side, employees have to fit into a new structure, there are asking to have a high level of commitment to the project. Time by time teams' productivity can gradually be deteriorated if team members are doing frequent go and forth between project or if there is a high employee turnover.

The goal of this paper was to answer the following question:

- What can an employee do to limit working overtime while keeping a good productivity level in a project-oriented organization?

Firstly, the root cause analysis identifies several causes that lead employees to work overtime in a project structure: unorganized processes, bad time management, employees wrong career bet and accessibility of the employee due to new technologies. As a result, our research paper focused on finding solutions that could be implemented and that would help team members to limit their number of additional hours worked while increasing their daily productivity.

Secondly, this paper demonstrated that several solutions are easily applicable to project management. Based on the literature, scientific experimentations and studies we came with four feasible alternatives which are: disconnecting from work and technologies during lunch breaks, adopting 17 minutes of break every 52 minutes of intense work, reducing work to a maximum of 6 hours per day and lengthening the work to 6 working days.

Using different methods of analysis, we highly recommend the second alternative which consists of disconnecting from work and technologies during the lunch break. The study of John Trougakos, a professor at The University of Toronto helped us to support this alternative and the results had shown that employees improved their concentration and therefore their efficiency. In addition, this alternative is recommended because it adds value to employees, it will not only make them more productive and boost their concentration, but it will also make the group members more creative, more inclined to create links in the company and build a network.

Finally, this alternative is the cheapest and the easiest to implement as it does not require drastic changes and additional cost for the organization. In term of time allocation, it will be beneficial

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for the well-being of the team. In conclusion, this solution addresses the problems exposed while having a minimal impact on the rest of the company.

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About the Author

Camille Timmerman

Paris, France

Camille Timmerman is a student in SKEMA Business School. She did the second semester of her first year of master in Skema Suzhou campus and found an internship in Digital Marketing in Shanghai. After almost a year in China, Camille integrated the Master of Science Project & Programme Management and Business Development in the campus of Paris at La Defense. Recently, she finished a 6 months internship at Publicis Sapient in Paris where she was a New Business Project Assistant. In this very dynamic agency, she worked on Agile, Data and Digital Strategy topics. Camille has mild experience in project management and wants to pursue her career on digital business transformation in a consulting company.

Camille lives in Paris, France and can be contacted at camille.timmerman@skema.edu