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## Factors influencing temporary innovation teams

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**Abstract:** In this ongoing research, I aim to develop an understanding of factors influencing temporary innovation teams. An innovation team is defined as a purposely created team conducting innovation, meaning they are not just “any” team that accidentally innovates. Innovation teams have gained more and more interest lately, stemming from group development research, team building and organisational development. Except for “ordinary” innovation teams, innovation work is also conducted using Hackathons, where teams purposely are created aiming to solve defined problems in a limited time, i.e., temporary innovation teams. In research covering Hackathons, innovation-related aspects, for example, immaterial property rights, the benefit of collaboration, the problem with dysfunctionality, and the structure for planning and executing Hackathons, are explored. Not covered fully is the understanding of factors influencing temporary teams positively and negatively, to which this study aims to contribute. The following research will focus on the process of creating temporary innovation teams.

**Keywords:** Innovation management; innovation team; temporary innovation team; Hackathon; review

### 1 Problem

This research aims to contribute knowledge regarding what factors influence temporary innovation teams’ work, defined as teams purposefully created to conduct innovation work for a limited time. The definition is built on: 1) innovation teams are purposefully created to conduct innovation work (Johnsson, 2017b), and 2) temporary teams are “a group of individuals who might have little experience in working together and need to jointly utilise their skills to successfully undertake complex tasks for a limited time” Massaro et al. (2019).

Innovating is relevant for all organisations if they aim for continuous business over time (Nagji & Tuff, 2012; Tidd & Bessant, 2020). Collaboration with suppliers may be successful for organisations seeking solutions for given challenges not intended to be solved in-house. The reason is that suppliers know about new technology (e.g., Yu, 2010), they have the capability of developing innovative applications (Bossink, 2004), have effective and efficient operations and processes (Panesar and Markeset, 2008). The problem, however, can be finding the best supplier to solve the challenge identified. For this purpose of developing solutions for a challenge, Hackathons and temporary teams are two well-used methodologies – creating teams that solve a problem in a limited time, i.e., temporary innovation teams.

Hackathons aim to involve interested suppliers in solving a specific challenge during a structured process in a limited time, for example, a couple of days (Gama, 2017). The challenge is provided by (usually) an organisation (challenge owner), where the winner(s) usually wins a prize. For example, Hackathons were used to try to solve the Covid-19-situation (Yokoi et al., 2021). On the other hand, temporary teams can be created in intra- or inter-organisational settings (Burke and Morley, 2016). However, problems are identified, for example: solving large-scale problems in a limited time is difficult (Beretta et al. 2018; Pihlajamaa & Merisalo, 2021), the results are limited (DiSalvo et al. 2014), and participants become frustrated due to unclarities in the process Granados and Pareja-Eastaway (2019), which calls for further investigation.

## **2 Current understanding**

There is a long history of research on factors that enable team's work. For example, Rubin et al. (1977) found factors affecting team collaboration, to which Katzenbach and Smith (1993) added additional knowledge concerning factors affecting team efficiency and performance. Later, factors such as trust, leadership, and culture (Lombardo & Eichinger, 1995), organisational environment (LaFasto & Larson, 2001), members' fit for the team connected to their performance (Hackman, 2002), and how to solve a team's dysfunctionality (Lencioni, 2005), was identified and concluded into various models.

Factors influencing or enabling innovation teams' work have been identified (Derven, 2016; Ebrahim, 2015; Johnsson, 2018). Factors influencing virtual teams were concluded in a comprehensive review by Clark et al. (2019), followed by Johnsson (2021)'s review of factors enabling global innovation teams.

Recently, Hackathons have gained research interest to understand the structure: Soltani (2014) describes key components for successful Hackathons; Halvari et al. (2019) identified key attributes to describe the Hackathon process; Medina Angarita & Nolte (2020) clarified the Hackathon design aspects in a framework; Rys (2021) concluded how different types of Hackathon methods relate to the potential invention outcome, and also demonstrate the pillars of a Hackathon (Rys, 2022). None of the reviews considers aspects of temporary teams. However, Burke and Morley (2016) reviewed temporary teams to picture important factors to consider when conducting innovation work. Except for the review mentioned, previous research mainly focuses on specific topics, such as collaboration (Kaufmann & Carmi, 2017), immaterial properties (Massaro et al., 2019), climate (Nisula & Kianto, 2016), trust (Xia, 2009). However, developing a group into a performing team usually takes 4-6 months (Wheelan, 2013; Wheelan et al., 2020) and creating innovation teams is a fairly complex endeavour (Johnsson, 2017b). None of the identified articles highlights the concerns of Wheelan's or Johnsson's, except for Komssi et al. (2015). They suggest a pre-hackathon for team building, however, without demonstrating content to the pre-hackathon. In all, it is motivated to identify factors influencing temporary innovation teams.

## **3 Research question**

What factors influence temporary innovation teams' work, positively or negatively?

## 4 Research design

Following the process of searching-screening-synthesis, a systematic review is in its early stages, aiming to bring knowledge to the research question.

First, search strings were developed in iterations. As innovation, to some, is a synonym for product development or design, the following search strings were used: “temporary team\*” AND innovation OR “product development” OR “design”; “hackathon\*” AND team AND innovation OR “product development” OR design;

Second, as innovation is multidisciplinary, Primo’s search engine (available through Mälardalen University) is used to cover multiple databases and disciplines. Full text, open access and paper in English are criteria to meet. Because of the previous research conducted, this review span 2016-2022 for temporary teams and 2019-22 for hackathons.

Third, the collected papers will be downsized by reducing doublets and selecting relevant articles based on titles and abstracts for further analysis. In this perspective, there should be explicit keywords or phrases indicating, directly or indirectly, content regarding factors influencing temporary innovation teams’ work. The remaining articles will be thematically analysed and charted in two categories – factors that positively and negatively influence temporary innovation teams.

## 5 Findings

The literature review is ongoing and will be presented in the following categories:

- Factors influencing temporary innovation teams positively
- Factors influencing temporary innovation teams negatively

### 5.1 Expected findings

As I am in the early stage of exploring factors influencing temporary teams and some extensive reviews have already been conducted, I assume there will be a lot of overlaps, such as culture, climate, engagement, and knowledge. However, as Hackathons are about gathering people interested in solving a defined problem in a limited time, expected findings are about:

- distance to the Hackathon (i.e., is it possible to gather the people interested in participating),
- preparation before the Hackathon (i.e., how Hackathons are prepared and what results are known),
- facilitation/moderation of the Hackathon (i.e., how facilitation impact engagement at the Hackathon),
- experience from prior Hackathon (i.e., how familiar are the participants with the structure and proceedings),
- lack of knowledge of innovation-related methodologies (i.e., how familiar are participants with abstract thinking and problem-solving tools),

- rewards or incentives to participate (i.e., what reasons are the participants there),
- lack of commitment for potential follow-up-work (i.e., lack of incentives/possibilities/interest in participating in future work).

### 5.1.1 Factors influencing positively,

Here, factors that influence positively are charted. Ranked by count in papers.

**Table 1.** Factors influencing temporary innovation teams positively

<i>Author</i>	<i>Paper</i>	<i>Finding</i>	<i>Cause</i>	<i>Effect</i>
Alpha, A.	Review	Demonstration of finding here	Demonstration of cause here, if identified	Demonstration of effect here, if identified
Beta, B.	Case	Demonstration of finding here	Demonstration of cause here, if identified	Demonstration of effect here, if identified

### 5.1.2 Factors influencing positively, ranked by count

Here, factors that influence positively are charted in order by the appearance in the analysed articles. Ranked by count in papers.

**Table 2.** Factors influencing temporary innovation teams positively

<i>Factor</i>	<i>Description of factor</i>	<i>Count</i>
Factor A	Description of what Factor A refers to	123
Factor B	Description of what Factor B refers to	456

### 5.1.3 Factors influencing negatively

Here, factors that influence influencing negatively are charted. Ranked by count in papers

**Table 3.** Factors influencing temporary innovation teams negatively

<i>Author</i>	<i>Paper</i>	<i>Finding</i>	<i>Cause</i>	<i>Effect</i>
Alpha, A.	Review	Demonstration of finding here	Demonstration of effect here, if identified	Demonstration of effect here, if identified
Beta, B.	Case	Demonstration of finding here	Demonstration of effect here, if identified	Demonstration of effect here, if identified

#### 5.1.4 Factors influencing negatively, ranked by count

Here, factors that influence positively are charted in order by the appearance in the analysed articles. Ranked by count in papers.

**Table 4.** Factors influencing temporary innovation teams negatively

<i>Factor</i>	<i>Description of factor</i>	<i>Count</i>
Factor A	Description of what Factor A refers to	123
Factor B	Description of what Factor B refers to	456

## 6 CONTRIBUTION

Overall, this research contributes to prior research on temporary innovation teams, as factors influencing them positively and negatively will be identified. Tables and a framework or model will be proposed, adding knowledge to previous research. Further research avenues will be suggested.

## 7 PRACTICAL IMPLICATION

Practitioners can utilise the findings to develop methodologies for creating temporary innovation teams for, for example, Hackathons or inter- or intra-temporary innovation teams. The findings can be used for educating managers or students on a theoretical and or practical level.

## 8 FEEDBACK

Thanks for taking the time to read the research in progress. I would appreciate feedback on:

- the research process, overall,
- suggestion/discussion on ways to visualise findings and, in the future, develop methodologies creating temporary innovation teams.

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