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When is it time to stop an IT project?

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ABSTRACT

IT projects should deliver value to organizations but there are cases when, however well planned a project may have been, changes in the environment and/or in the strategic priorities of the organization mean it can never deliver value. Value is a subjective term and simply means, in this context, something that is important to the organization which would generally result in profit, in a commercial entity, or improved service, in a public entity. This paper addresses the problem of how to ensure that you will have the capabilities in place to know when your project can no longer deliver value and to take appropriate action. It does not discuss in detail the technical issues of project management execution, as a well-executed project can still fail to deliver value. Rather, it looks at the specific question of knowing when projects can no longer deliver value and putting measures in place to both prevent and address project escalation. We show how a capability based approach supported by the IT-CMF framework can improve your ability to quickly identify projects that have started but now can no longer deliver value. This capability approach increases the agility of the organization and makes it easier to develop and maintain competitive advantage.

INTRODUCTION

Organizations implement IT projects to improve the efficiency and productivity of their value creation processes. Value is something that is important to the organization which would generally result in profit in a commercial entity or improved service in a public entity. Creating effective business value through IT will provide a competitive advantage (Mukhopadhyay et al., 1995, Soh and Markus, 1995, Melville et al., 2004, Peppard and Ward, 2004). However, the mere implementation of IT alone can no longer assure business value and its associated competitive advantage.

Over the last two decades IT has become a commodity good, i.e. providing little differentiation (Carr, 2003). Despite the ubiquitous nature of IT, effective IT management continues to be a challenge for many organizations. Today, the focus needs to be on the business value that can be derived from IT projects. This 'business value' results from the optimized application of IT to deliver planned benefits which contribute to the creation of value for the business. Changes in the internal and external environment and consequent risks and opportunities need to be anticipated, and the ability of each IT project to deliver business value has to be ensured. Capabilities related to IT Project management need to be developed to support this outcome.

In this paper we examine how a capability based approach can inform and enhance an IT project's business value delivery. Peppard and Ward (2004) describe a capability approach as the strategic application of competencies to achieve organizational goals. IVI has developed an IT capability maturity framework using design science methodology to produce artifacts which address the problem of how to realize value from IT investments (Carcary, 2011). The intent of this paper is to outline how a capability approach can provide support for organizations to get true value out of their IT resources by building their project management business value focussed capabilities. This includes the capability to stop projects as well as manage well ones that should be continued.

In general stopping projects is the last thing we want to do. It seems to be human nature to see project completion as a success and project abandonment as a failure. However, sometimes it is important to stop a project because changes have occurred and the project completion can no longer provide the anticipated business value for the organization. Even a well planned project, in terms of its original business case, that appears successful on objective metrics such as budgetary control and scheduling can arrive at this crisis point. A project can be 'going well' in terms of cost, time, and meeting defined requirements, but at the same time may be drifting out of alignment with the overall strategic needs of the organization because of important changes in the external or internal competitive

environment. This paper concentrates on the readiness to recognize these changes and ability to deal appropriately with them.

The ideas discussed in this paper develop in more detail the initial research outlined in our whitepaper “How can I know when it is time to stop an IT project” (Crowley and Thornley, 2014). The paper is structured as follows: following this introduction, section 2 outlines the need for a new approach to IT project value delivery. Section 3 provides a review of how a capability approach supports business value realization. Section 4 discusses how the capability approach helps to address particular problem of knowing when to stop an IT project and finally section 5 outlines key insights and future research.

A NEW APPROACH TO IT PROJECT VALUE DELIVERY

Business Value is a term that has not been well defined either in literature or in its everyday use. Since value is contextual in nature, for this paper we use the term to describe what is important to achieve for the organization, which for example could be increased market share in a commercial entity or improved service delivery in a public entity. But what is important to the business and what constitutes value can change, sometimes very quickly, because business priorities change and/or the external environment changes. Clearly the relationship between the business priorities, as reflected in the strategic business plans and the external environment is one of complex interaction. There are at least two possible scenarios for a value shift to occur.

- Firstly, the project is capable of delivering the planned value but there has been a change in what is important to the organization so that the planned value is no longer of value.
- Secondly, what is of value to the organization does not change but new, unforeseen information or events – such as economic and/or political instability in the target region - mean that it has become impossible for the IT project to deliver value.

Both these scenarios change the ability of a project to deliver the intended value.

These in turn present the problems of knowing when it is time to change priorities (what is of value to the business) and the problem of making sure that this change is reflected quickly in what the business is actually doing and also not doing (and how quickly the value can be re-assessed). In this paper we are focussed on the second problem. We provide guidance drawn from both literature review and practical artifacts on practices and approaches which make it easier to identify and stop projects that need to be terminated. It

is important to remember though, that even the best planned project, with an excellent business case, may need to be stopped because of the nature of the changing competitive environment.

If an IT project that can no longer deliver value is allowed to continue this is known as “project escalation” (Keil, 1995). This specific term is used to describe the way that failing projects are allowed to continue despite overwhelming evidence that they are destined to fail. Project escalation is about continuing commitment to a failing course of action arising due to changing business value priorities or a changing competitive environment. Project escalation represents a decision to continue in the face of negative feedback. We are referring here to a continued commitment to failing projects such as ‘runaway’ or ‘de-railed’ projects. This should not be confused with the usual use of the word ‘escalation’, which normally refers to the action of raising an issue for resolution to a higher authority.

The decision to call a halt to a problem project is not an easy decision to make. The negative feedback about the project can be about uncertainty surrounding the likelihood of goal attainment, and the lack of clear evidence about whether to continue or not (Keil, 1995) (Brockner, 1992). A choice has to be made on continuing the project, which is associated with certain costs, or abandoning it, and normally there is some ambiguity associated with the consequences of either action. Although, currently facing negative interim outcomes, the eventual project outcomes may or may not be negative (Pan, 2006). The Hubble telescope and Sydney Opera House are some notable examples that were initially viewed as project failures, due to being over budget and schedule, but are seen as outstanding successes today in terms of delivering long term value (Baker, 2002).

A project arrives at an escalation decision point of whether to stop or carry on through a combination of psychological, social, and organizational factors (Keil, 1995). The Project Manager and Project Sponsor have several, sometimes conflicting, considerations to take in a decision to de-escalate a project. How do they know the project is escalating if the criteria to judge this have not been clearly defined at the project start? Is there a good business case to refer to, which details the expected generation and realization of benefits? (Zwikael and Smyrk, 2012). Are there relevant metrics available to judge the effectiveness of the investment in delivering value? There are usually multiple stakeholders with varying expectations, and perceptions of success and failure are complex in that one person’s success can be another person’s failure (Al-Ahmad et al., 2009).

Additionally the problem of sunk costs and justifying the project decision-making to date in the face of prior resource use needs to be addressed (Keil et al., 2000).

What level of additional risk is appropriate to take, when so much has already been invested? Large risks can produce very large rewards. (Keil and Mähring, 2010).

A good project team will have a high commitment to the project. In the case of escalating projects, this very commitment can work against the project manager. Commitment is an emotional state which can impact negatively on one's ability to make a rational and objective decision in relation to project termination. The project sponsor, who usually makes the decision, has their reputation, and the resulting likely taint of failure to think about also. To address project escalation there must be a way to overcome both the 'mum effect' i.e. reluctance to report observed project issues, and the 'deaf effect' i.e. reluctance to hear bad news about project problems (Cuellar, 2009, Keil and Robey, 1999)

Projects that can no longer deliver value that are not stopped will continue to drain resources from the organization. Eventually, or in some cases quite quickly, this can fatally impact the organization – particularly, when one considers the high cost associated with capital IT projects. The inability to identify and terminate 'escalating' projects reduces the ability to stay in business or, in the case of public organizations, can negatively impact the delivery of a quality service.

Agility, the ability to respond quickly to external change, is a key factor in maintaining competitive advantage. The focus is normally on being able to start new projects or products quickly but it is also important to be able to stop quickly and cancel projects that will not bring value. Flynn (Flynn et al., 2009) suggests that an organization that is good at knowing when to stop projects is also good at learning from projects. Thus improving your maturity in this area will have desirable wider positive impact of delivering successful, business aligned projects. The practice of continuing with doomed projects may also be an indicator that there is poor articulation and communication of what is really important to the organization (what is value for that organization). This is a problem that needs to be addressed not only due to its drain on resources but because of its corrosive effect on the ability to innovate and stay competitive.

The Standish Group, who carry out research on IT project successes and failures with a view to improving the value derived from these projects, state that 79% of IT executives in a recent survey said it was "difficult" or "very difficult" for project executive sponsors to recognize when they should pull the plug on projects (TheStandishGroup). There is a tendency to continue commitment to a project even when its value is in doubt due to underlying emotional and political factors (Cleland et al., 2000). For example, the project manager and team members may fear loss of power, status or even their job as a result of such project

termination. Organizational politics may also come into play where the project in question is a 'pet project' of some senior executive sponsor or where groupthink leads the team to believe all project difficulties can be overcome in time. So, the question is what can you do so that your organization is less likely to carry on with projects that are well past their ability to deliver value and make informed and timely decisions on 'when to pull the plug'? We argue that a capability approach can improve performance in this difficult area of project management. A multi-faceted and integrated strategy is needed to address all the complex issues that can block the stopping of projects that should be stopped.

HOW THE CAPABILITY APPROACH SUPPORTS IT PROJECT VALUE REALIZATION

Over the past five years the Innovation Value Institute has been developing a Business Value oriented IT management framework. IVI is a not for profit research institute that developed the Information Technology Capability Maturity Framework (IT-CMF) in response to the observation that there was no common IT and Business framework, using a common language and a shared IT business value management approach. (Curley, 2006, Curley et al., 2012)

The IT-CMF is built on Design Science methodology and an Open Innovation approach. It is based on a framework initially conceived as part of the Intel's IT transformation to deliver improved management practices that will mature organizations IT's capability to convert information technology's potential into new business value and innovation for organizations (Curley et al., 2012). Design Science *aims at developing ways to achieve human goals offers prescriptions and creates artifacts that embody those prescriptions* (March and Smith, 1995, p254).

The complex nature of IT project value realization suggests that a comprehensive approach is required to address it, involving collaboration between project management, IT management and business management. The IT-CMF is a holistic management system for IT capability, therefore suitable to guide IT project business value delivery in the organization, taking a capability approach.

The IT-CMF is a structured body of knowledge that enables IT capability assessment and improvement across all key aspects of IT management and delivery. The model is composed of 4 macro capabilities, subdivided into 35 critical IT capabilities. Macro capabilities structure these 35 into groups around broad strategic areas. Figure 1 visualizes the IT-CMF Framework.



Figure 1: IVI's IT capability maturity framework (IT-CMF) (Source: Innovation Value Institute)

This structure provides broad coverage for all aspects of managing IT. The components, called Critical Capabilities (CCs), are configurable to address the various challenges facing IT management. The IT-CMF identifies an organization's maturity in key critical capabilities and identifies the key areas where the organization wants or needs to improve to deliver business value through IT.

Each capability can be assessed along a five-level maturity curve framework, from the "Initial" level of no formal capabilities, to an "Optimizing" level of value-centric IT management. The higher levels of maturity reflect improving organizational practices. The framework provides practices, outcomes, and metrics, at appropriate capability maturity levels within the IT specific domain, thereby enabling the creation of a capability improvement roadmap.

Focused on both processes and outcomes, project managers can use the IT-CMF framework in their own specific context and environment to improve IT project capability and business value management practices.

HOW THE CAPABILITY APPROACH HELPS TO ADDRESS IT PROJECT VALUE REALIZATION

A capability comprises *the differentiated resources that generate operational and strategic value for an organization* (Bannerman, 2012, p9). The IT-CMF is based on a capability approach because this consistently leads to improved performance (Donnellan et al., 2011, Curley et al., 2012, Kenneally et al., 2013, Grant, 2010, Peppard and Ward, 2004). We look at particularly relevant CC's from the IT-CMF which can help improve the performance in recognizing and stopping projects which have lost their ability to deliver value. What are the barriers to stopping these IT projects and how can they be overcome?

Reducing the chances of project escalation is a complex problem with many facets ranging from financial

reporting issues to the softer issues such as managing people's fears of failure. A low maturity approach is characterized by ad hoc attempts to fix the project in hand while higher levels of maturity focus more on an organization wide improvement in change management and learning (Flynn et al., 2009). Improving organizational capability drives project performance. Having high levels of capability in project management is critical to an organization's ability to respond to change. (Bannerman, 2012)

A capability based approach addresses all these issues and reduces the chance of 'runaway' non-value delivering projects being allowed to damage the organization. Below are our recommendations to counter project escalation.

Focus on Business Value

It is essential that every project has a sound business case, describing how it will bring value to the organization, and that this is reviewed regularly and maintained current. Too often the focus is on delivery of the technology itself, and not on information and its effective use to deliver value. (Marchand and Peppard, 2008) Instead, project definitions and methodologies need to support the generation and realization of benefits. Accountability for the outcome realization significantly improves project success. The project owner proposes the business case for approval by the funder and therefore should be held accountable by the funder for its eventual realization. (Zwikael and Smyrk, 2012) There must be agreement on the primary objective of the project by all stakeholders which in turn should be clearly communicated and regularly enforced (Keil and Mähring, 2010). A project should be driven by a clear set of testable benefits. (Southon et al., 1999) If a project claims it can deliver new unexpected value, despite the clear failure of its originally intended value, then Keil suggests that a new business case should be generated to guard against the invention of new rationale for continuation (Keil and Mähring, 2010). The relevant Critical Capabilities in these cases are Benefits Assessment and Realization (BAR) and Portfolio Planning and Prioritization (PPP) Portfolio Management (PM) and Programme and Project Management (PPM).

Many organizations tend to focus on implementation of the technology but not sufficiently on the realization of expected business value linked to strategic goals. IT has no intrinsic value, other than the financial worth of the assets. Value is only created through exploiting these assets and is only achieved when people do things differently and when those changes have been planned to realize specific business outcomes for the organization. Maturity in the CC BAR provides the capability to embed benefits management practices throughout the full life cycle of an investment. This includes managing the cultural and behavioural change

that the technology enables, so that benefits are actively managed, and business value is created and sustained.

A high maturity in the Critical Capability PPP would ensure that new and ongoing investments are assessed against their business value contribution and that business value would be a key component in evaluating the effectiveness of the portfolio planning and prioritization process. Likewise, high levels of PM capability would result in effective value management at the programme and project levels. With mature PPM all programmes and projects are run with a business value focus.

Good Governance is Vital

A good start to preventing IT project escalation is to pre-emptively ensure that there is a sound business case and effective governance systems in place. There should be 'separation of powers' so that the person who decides whether to stop an IT project is not the same person as the one whose idea the project was, avoiding the pitfall of self-justification (Staw and Ross, 1987, Zwikael and Smyrk, 2012, Pan et al., 2006). The governance structure needs to include regular 'stepping back and taking stock' reviews taking an outsider perspective and always considering other options. (Keil, 1995). The level of sunk cost should also be disregarded when deciding whether to continue a project (Pan, 2006). Negative events impacting the value of the project should be prepared for in advance and, if they happen, big decisive changes should be made to the IT project, including termination, rather than small adaptations (Charvat, 2003). It should be assumed that unless structures, procedures and rewards are put in place to counteract them then the forces of inertia will tend towards failing projects being allowed to escalate (Pan et al., 2006, Keil, 1995, Keil et al., 2000). Improving capability in this area can be achieved using the critical capabilities IT Leadership and Governance (ITG), Programme and Project Management (PPM) and Benefits Assessment and Realization (BAR)

The Critical Capability of IT Leadership and Governance (ITG), provides the overarching framework for the development and implementation of capabilities to lead the IT organization. It is well recognized that without visible support from the leaders any initiative for change has little hope of a successful outcome, so this capability is vital in establishing an IT project as a priority. ITG is concerned with IT decision-making processes including underlying decision criteria, definition of responsibilities and escalation paths - all of critical importance in realizing business value.

High maturity in IT Leadership and Governance capability is very important because ITG directs strategy realization. In some cases, the return of the investment in IT capabilities is low, because there is no coherent strategy to define what projects would bring more value

to the organization, or the organization does not have an appropriate feedback mechanism or control loop, measuring the impact of previous or current approaches. With an appropriate strategy, aligned with the business and considering appropriate feedback mechanisms, the investments in IT projects will be aligned to what the organization needs.

In addition to governance at the organizational level a mature Programme and Project Management capability will ensure that in addition to organizational structure, policies, standards and processes that good governance is established with the appropriate involvement of the stakeholders. A high BAR capability instils governance across the full life cycle of an investment decision and incorporates benefits realization practices and decision-making bodies to secure the delivery of the business value.

Communication and Transparency is Essential

There is a high level of change and uncertainty associated with IT projects (Bannerman, 2012) and therefore a need for transparency, so that all stakeholders can see what is going on with the project. This will enable issues to be identified at the earliest opportunity. In order to stop projects there must be some way for bad news about the project being said and being heard. This is a challenge as people generally don't like being the bearer of bad news and, even if this problem is overcome, the listener generally doesn't want to hear it. Communication is very important in times of change (Keil and Mähring, 2010, Charvat, 2003). Not only is it important to have good communication processes in place, but people must also be explicitly encouraged and rewarded for alerting projects to bad news and problems. Straw and Ross (1987) and (Keil, 1995) suggest providing incentives for a good project process, in terms of recognising problems and dealing with them rather than just rewarding completion. The idea of having bad news only reporting meeting is proposed by Flynn et al (2009) and the importance of dealing with barriers to bad news reporting is dealt with by (Cuellar, 2009). In terms of actual reporting systems accurate financial information is essential and there must also be a way of stopping the flow of money to projects (Keil and Mähring, 2010). The relevant Critical Capabilities here are IT Leadership and Governance (ITG) Portfolio Management (PM) and Benefits Assessment and Realization (BAR)

Both leadership and governance are key activities in ensuring appropriate communication occurs and that transparency is in place and seen to be in place. A mature leadership capability will foster a high performance culture of credibility, accountability and teamwork - not afraid of failure. Additionally, a high governance capability will provide decision and escalation bodies, with the appropriate composition,

scope and decision rights for transparency in status monitoring and reporting. PM capability will ensure accurate and timely reporting to enable effective and agile decision-making in relation to IT project management. High BAR capability includes the identification, definition and use of relevant business metrics that enable management and oversight and communication of the benefits realization effort to foster awareness and support from the stakeholders.

Stakeholders Need to be Managed

Project success depends on satisfying the stakeholders and being accepted and largely used by the end users after deployment. (Al-Ahmad et al., 2009) There is a need to be aware of the importance of stakeholder resistance and its potential impact on the success of IT projects (Greenwood et al., 2010). Managing stakeholders during the project development may prove crucial to project value attainment and help offset project escalation. This includes managing evolving stakeholder expectations and stakeholder interrelationships that may develop over time. (Pan, 2005)

There is a potential tension between wanting a project manager with the charisma and drive to successfully complete a project whilst also having the ability to successfully stop it if necessary. There are also complex factors, including perceived credibility and gender, which make it more or less likely that someone crying 'stop' will actually be listened to (Cuellar, 2009). In one sense it can be useful to have some turnover of project staff but this can cause problems of low morale (Staw and Ross, 1987). Greenwood advocates using Stakeholder Impact Analysis methods to identify and gain understanding of the underlying socio-complexity sources of risk to the project success (Greenwood et al., 2010). All the people management issues have conflicting and complex requirements, such as managing the tension between change and continuity or success and failure, so it is particularly important to reach a high level of maturity in people management capability. There is a case to be made for matching the risk propensity of the project manager to the project to enhance the probability of project success (Keil et al., 2000). The relevant Critical Capabilities to address these issues are People Asset Management (PAM), Relationship Asset Management (RAM), Programme and Project Management (PPM) and Benefits Assessment and Realization (BAR)

The employees in any organization are key stakeholders in the business value realization of IT projects. Unless the employees understand their role and are willing to engage in the changes required of them, it is going to prove impossible to achieve the intended project value (Pan, 2005, Greenwood et al., 2010). The People Asset

Management organizational capability will help to meet an organization's demand for employees to enable the IT project value delivery. There will be an understanding of both the quantitative and qualitative requirements in the workforce to support this.

High PAM capability provides business value awareness across the organization. Strategic workforce management policies and people strategy, culture and satisfaction, outline long-term needs regarding value realization are all manifestations of a PAM capability. These would support implementation of a value culture and realization strategy including a focus on effective training and education in relation to business value realization from IT projects.

Definition of required skills would incorporate IT project business value realization considerations, with well-functioning processes in place to develop and promote high-potential employees with proven abilities in business value delivery. Monitoring and management of employee satisfaction, including employee motivation occurs at appropriate intervals to ensure good motivation. This motivation will manifest in a willingness to make the necessary changes required from the employees, in order to support the business value realization effort. Higher employee motivation has been shown to result in lower turnover rates (Mak and Sockel, 2001). In high PAM capability organizations satisfaction with management is increased through regular employee surveys and identification of appropriate value measures to further improve employee satisfaction.

A high level of maturity in the critical capability Relationship Asset Management is required to successfully manage the complex mix of expectations, perceptions and inter-relationships of all stakeholders. This CC also fosters an acute awareness of the business environment and the changes, and directing this intelligence to the appropriate authority for action thereby mitigating risks to the project success. High Programme and Project Management would drive the use of appropriate channels to ensure the communication loop with stakeholders is robust in planning, execution and assessment of IT projects with provision of the possibility to stop or radically change an IT Project. With a mature BAR capability the ability to identify appropriate stakeholders and to engage with them to achieve the necessary changes for benefits realization, rather than just an IT project delivery focus, is ensured.

Organizational Culture Must Support Failure,

Learning and Innovation

A culture should be developed that encourages problem disclosure (Keil and Mähring, 2010). It is easier to stop projects if there is culture based around business value for the whole organization rather than loyalty to

particular projects. There needs to be an understanding throughout the organization that stopping projects that do not bring value to the organization can prevent the organization as a whole failing.

The governance of projects to allow failure sounds initially contradictory and there is a tension between rewarding competence and also allowing the possibility of acknowledging failure (Staw and Ross, 1987). There is a move towards 'fail fast' project management approaches (Glick, 2013), which develop rough prototypes and then discard them quickly if they don't work out, suggesting that careful planning of complex and expensive IT projects may not always be the best approach. There is also a suggestion that stopping projects should just become part of what a business does thus moving towards the model of an experimental organization. In some cases it can be useful to reduce the links of a project with the central purpose of the organization. This may appear to go against conventional advice on the importance of business case linked to organizational mission, but it can open up space to improve innovation. If a project is labelled as peripheral or experimental it is treated on its own merits, and stopped on its own flaws, rather than being seen as an integral to the organizational mission. Current work on project escalation also shows that getting good at stopping projects makes an organization generally better at learning and thus increases maturity in a range of different areas (Flynn et al., 2009). The relevant Critical Capabilities to instil a value culture and improve capacity in learning and innovation are Benefits Assessment and Realization (BAR) and Innovation Management (IM).

Identifying, trialling and adopting practices which contribute to business value realization and effectively using and evolving those practices would reflect a high BAR capability maturity. This will produce a culture of learning and an evolving agile approach to achieving business benefits from IT projects. The Innovation Management CC encourages an attitude of acceptance of creative well-informed risk taking, collaboration and teamwork skills development. A high maturity in this critical capability rewards innovation and communicates the value and impact of innovation, encouraging innovation becoming an everyday activity for the employee. This results in a more flexible and agile workforce ready to adapt to the changing environment in order to optimize the business value potential of IT projects.

Our five recommendations to prevent IT project escalation are summarized in Table 1 below.

Table 1: Recommendations to prevent IT Project Escalation

1	Focus on Business Value
2	Good Governance is vital
3	Communication and transparency is essential
4	Stakeholders need to be managed
5	Organizational culture must support failure , learning and innovation

CONCLUSIONS AND FURTHER RESEARCH

From review of the IT-CMF the authors identified specific IT-CMF capabilities that have the potential to support the value realization of IT projects, thereby avoiding a situation where project escalation will arise. Increasing your maturity in project escalation management can be complex, but it has multiple benefits. Using information from IT projects which have been stopped provides a means of continuously learning about what works and does not work in generating business value for your organization. The alternative, not being able to stop doomed projects, is dangerous and possibly fatal to the organization.

The IT-CMF Framework includes important capabilities that are able to support the realization of business value through high capability maturity in areas that help prevent IT project escalation. The IT-CMF provides guidelines on how to improve your current practices to increase your capabilities in these vital areas of IT project management. This can help the organization gain agility and competitive advantage.

In future research we intend to further develop our understanding of project escalation phenomenon and its remedies, employing targeted focus groups and questionnaires to extend our insights.

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