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ABSTRACT

In modern organizations, Information Technology (IT) leaders wear many hats. They are technicians responsible for overseeing specialized tools that organizations use to conduct operations, defenders protecting the organization from outside threats, teambuilders developing specialized talent to support organizational needs, strategists leveraging emerging technology to disrupt markets, and administrators overseeing large capital and operating budgets. Additionally, technology evolves rapidly such that IT leaders must frequently make decisions about products and approaches that have no generally accepted best practices, regarding topics where much of the publicly available information is produced by the providers of the very technology under consideration. The study of IT leadership provides unique value to the Information Systems (IS) discipline in three distinct ways. First, it can provide IT leaders with practical insights regarding emerging phenomena through analysis conducted by scholars without the conflicts of interest that are inherent in the information provided by vendors of IT products and

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services. Second, the study of IT leadership can conceptualize and address IS related questions and issues from the perspective of an administrative leader. Third, the study of IT leadership can help identify ways that IT leaders can grow, develop, and improve as business professionals. This monograph provides a summary of the extant research literature concerning IT leadership and the unique challenges that those professionals face.

1

Introduction

> People often overestimate what will happen in the next two
> years and underestimate what will happen in ten.
>
> <div align="right">Bill Gates</div>

IT leaders serve unique roles within organizations. In today's world,
nearly every organization uses technology to manage day-to-day opera-
tions. Additionally, many organizations rely on technology as a source
of strategic innovation. Microsoft Chief Executive Officer (CEO) Satya
Nadella famously quipped "Every company is now a software company"
(Bora, 2023). However, as organizations look to expand their use of
technology in new and innovative ways, the role of an IT leader becomes
quite complex. For many years technology leaders could focus their
efforts on aligning technology investments to business strategies (Venka-
traman *et al.*, 1993). However as the role of technology in creating new
strategies has developed, the expectations of technology leaders have
grown (Carter *et al.*, 2011). They must manage the role of technology
outside of the dedicated department which they lead, while at the same
time managing a workforce and budget that are dedicated to provision-
ing and supporting technologies used across the various functional areas
of the organization. These dual roles of: (1) *the executive responsible*

for helping the organization leverage technology for performance gains, and (2) *the leader of a department of specialized professionals managing a portfolio of complex technological resources*, can present unique dynamics that technology leaders must navigate.

In fulfilling these responsibilities, IT leaders must play a variety of roles for a wide range of stakeholders. This reality requires leaders to manage numerous organizational tensions, which makes their role unique when compared to other senior management roles (Bendig *et al.*, 2022; Peppard *et al.*, 2011). One such tension concerns the supporting role that technology often plays in business initiatives that are led by other organizational functions. Functional areas such as Marketing, Finance, Operations and Supply Chain depend on technology to successfully complete essential tasks (Whitler *et al.*, 2017). For example, predictive analytics tools often play a key role in organizations' efforts to reduce customer churn. However, such efforts depend heavily on the supporting efforts of IT specialists. The notion that IT provides only supporting value to such initiatives can lead to frustration, apathy, and potential turnover for the very individuals that helped make such initiatives successful.

A second tension IT leaders often face concerns the breadth of knowledge they must possess to make decisions. As they are responsible for supporting the operations of other functional areas within the organization (e.g., marketing, supply chain), they must manage the requests that those areas make for technology resources. This can lead to situations where IT leaders are asked to guide the selection, implementation, and support technology tools that they neither understand nor are qualified to use (Bendig *et al.*, 2022).

New technologies, such as Cloud Computing, Social Media, Artificial Intelligence, or Edge Computing, can bring exciting new opportunities for organizations. However, they too present tensions that must be managed. Technology leaders are often asked to understand new technologies and articulate how they can be leveraged. However, technical innovations are often also associated with substantial hype and misunderstanding (O'Leary, 2008). At times when IT leaders are unfamiliar with a new technology or unable to implement new technologies due to other organizational demands, the hype associated with a new

technology can lead functional areas like Marketing and Operations to conduct their own experiments, outside of the purview of IT leaders. This tendency towards "shadow" IT (Raković *et al.*, 2020) creates an additional tension that IT leaders must manage.

Another tension that IT leaders often face concerns the availability of unbiased information relating to new and emerging technologies. In addressing the opportunities and threats associated with emerging technologies, leaders must make decisions from an information deficit (Carter *et al.*, 2011). Unbiased information regarding the value, limitations, and risks of emerging technologies is necessarily limited, as new technologies have yet to be tried in a variety of contexts. Due to this, the early work of assessing the value of new and emerging technologies is often conducted by the very organization that is selling the technology (Linden and Fenn, 2003). This makes it difficult for IT leaders to find unbiased assessments of that technology. Further, as untried technologies may introduce unknown risks to an organization's computing environment, implementing such technologies can negatively impact an organization's existing computing ecosystem. Communicating and managing these risks, without appearing to impede organizational innovation initiatives, is a critical skill required of today's IT leaders.

Based on these numerous and often competing tensions, the study of IT leadership may focus on different levels of analysis including industries, organizations, teams, and individuals. Scholars often study the development of the IT workforce from the lens of social responsibility or economic development. When examining the IT workforce from these lenses, scholars may consider individual workers who may shift between companies and industries. In contrast, the study of the IT workforce from the lens of IT leadership may focus on how an organization attracts, retains and develops staff in a single organization. There may be similarities between the informant samples and analytical methods used in these approaches, however, the research questions and theoretical lenses used to conduct the research will differ significantly.

We begin our review of the IT leadership literature by first discussing the various domains of scholarship that address IT leadership questions. We then review several of the theories that have been used to guide

prior IT leader research. Next, we examine several of the contemporary issues and administrative challenges that IT leaders face. Finally, we close with suggestions for future examination.

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