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# Infusing High Performance Teams in Information System Work Environments

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**ABSTRACT**

*Teams with the right skill sets can develop into high performance teams, which employ the right set of principles and attitudes to achieve business goals successfully. Although high performance teams have been explored in other domains, understanding how to develop high performance teams in an IS context is lacking. This research develops a model to study high performance teams by analyzing their characteristics using the work system theoretical lens. The result is suggestions on how to create high performance teams in IS environments to achieve business goals as well as IS success.*

**Keywords**

*High performance, high performance team, information system, IS, work system, work system theory, IS success*.

**INTRODUCTION**

Organizations are challenged constantly by *change* (Hanlan, 2004). As organizations seek to maintain their competitive edge, they attempt to reduce costs and address increasing demands to deliver high-value products and services. To reconcile and achieve these competing goals, organizations adopt new structures such as flatter organizations and partnerships via alliances, cooperative venturing, outsourcing and joint project development (Daniel & Davis, 2009; Laszlo, Laszlo & Johnsen, 2009). The dynamism of these changing organizational strategies need to be implemented by highly reliable empowered teams, otherwise known as high performance teams (Buchholz & Roth, 1987; Castka, Bamber, Sharp & Belohoubek, 2001; Daniel & Davis, 2009, Hanlan, 2004; Laszlo et al., 2009).

High performance teams are specifically developed to drive business success (Hanlan, 2004). Research has explored the utilization of high performance teams in manufacturing (e.g., Tsai, 2006; Van Buren & Werner, 1996), retail sales (e.g., Thompson, Baughan & Motwani, 1998), healthcare (e.g., Tam, Chessum & Leopold, 2012) and research and development (e.g., Daniel & Davis, 2009). However, research on high performance teams is sparse in the IS field.

This study explores how we can understand high performance teams in IS using the work systems theoretical lens (Alter, 2013). Work System Theory provides a socio-technical perspective to understand an information system and its development using a framework, conceptual elements, and life cycle. By considering the information system as a work system, we can identify how to map and relate concepts of high performance teams in an IS context. In essence, just as how high performance teams are aimed to achieve business success, their infusion in the IS work environment through perspectives of work system lens may likewise drive the attainment of *IS success* (DeLone & McLean, 1992; Petter, DeLone & McLean, 2012). *This study, therefore, identifies how to relate high performance teams to an information work system.*

**BACKGROUND**

**High Performance Teams**

Although high performance teams (HPTs) is not a new concept in the management literature, it lacks a universally accepted definition. Hanlan (2004) defines HPTs as those teams that *"achieve a quantum leap in business results in less than a year in all key success dimensions—customer value, operational value, shareholder value, employee value and cultural foundation"* (p.xvii-xviii). By "quantum leap," there should be at least 50 percent improvement in all success dimensions. These improvements are achieved through the practice of HPT principles—those which synergize teams beyond the rigid sets of guidelines of contracts and service level agreements. These principles drive them towards advanced team development and strong cohesion, that, consequently, communication becomes an overarching core strength guiding their actions (as supported by Buchholz & Roth, 1987; Castka et al., 2000; Landale, 1999; Yeatts & Hyten, 1987).

To be successful, high performance teams should (1) accomplish all key success dimensions in less than a year; (2) be used when breakthrough results are needed by the organization; (3) be principle driven; (4) be guided by those who understand the organization's underlying processes; and (5) be created by a shift in culture.

Hanlan (2004) also identified so-called "common themes of missed opportunities" that describe what would-be HPTs should have done to achieve high performance. These themes related to failure include (6) runaway empowerment, in which team members mandate their own rules; (7) disillusioned leaders and workforce, where leaders and/or members fail to implement team recommendations or adhere to unrealistic expectations of the team; and (8) and chaos, in which there is inadequate planning which creates confusion.

By considering both themes for success and failure in high performance teams, it becomes possible to identify how to develop high performance teams in dynamic environments.

### Work System Theory

In the IS field, work systems theory (WST) serves as a lens to view common practice and research from a technology system perspective (Alter, 2013). A work system is a unit of analysis for systems within an organization where humans and/or machines use informational, physical and other resources to render products or services for an intended customer (Alter, 2013). In particular, information systems are, in fact, work systems whose processes and activities are devoted to the capture, transmittal, storage, retrieval, deletion, manipulation, and display of information.

Emphasizing the business view, the Work System Framework (Figure 1) presents a quick outline of the form, function and environment of the IS work system (Alter, 2013).

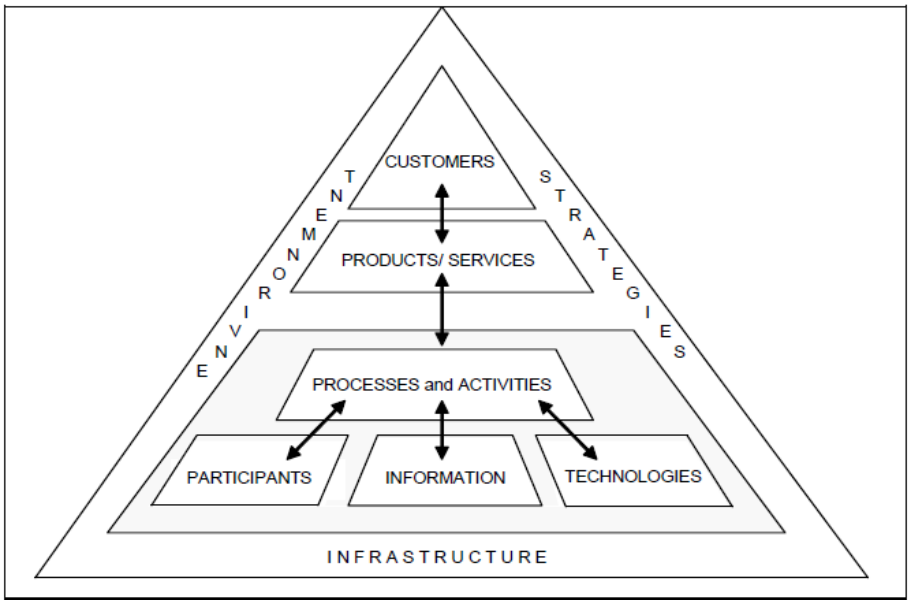


**Figure 1: Work System Framework (Alter, 2013)**

The work system view provides a basis to analyze IT-reliant work systems holistically, while it disambiguates system complexities via a thorough understanding of its elements: (1) customers, (2) products and services, (3) processes and activities, (4) participants, (5) information, (6) technologies, (7) strategies, (8) environment, and (9) infrastructure (Table 1).

The Work System Life Cycle (WSLC) represents the stages of planned and unplanned changes that happen to an IT-reliant work system (see Figure 2). For planned changes, the WSLC usually follows similar generic phases of a project lifecycle of initiation, development and implementation, and maintenance. The self-pointing arrows represent continuous adaptations, constructions, and workarounds that naturally evolve (i.e., unplanned) in the work system without being a part of a formal (planned) project. The duality of the changes, therefore, provides a lens to observe changing characteristics and processes in the dynamic IS work environment.

Examining information systems as a work system provides a current-state snapshot of an IS work environment (i.e., any IT-reliant work system) via the Work System Framework and Work System Elements. The work system life cycle (WSLC) model identifies the evolutionary characteristics of a work system as it changes over time.

| Work System Element | Description |
|---|---|
| **Customers** | people who receive direct benefit from the product and services of the work system |
| **Products and Services** | information and services that the work system produces; outputs may be tangible, intangible (e.g. enjoyment and peace of mind), or both |
| **Processes and Activities** | overall processes and activities (e.g. information processing, communication, sense making, decision making, thinking, physical actions) that may be tightly defined or relatively unstructured |
| **Participants** | people who perform work in the business process |
| **Information** | codified and non-codified information resulting from a participant's work |
| **Technologies** | tools and techniques used by participants to perform work |
| **Strategies** | approaches that support or explain the overall organization's strategies (e.g. assembly line approach, case-manager approach, mass customization approach) |
| **Environment** | organizational, cultural, competitive, technical and regulatory environment where the work system operates |
| **Infrastructure** | resources on which the work system rely (e.g. human, informational, technical, etc.) that may be shared with other work systems |

**Table 1: Description of Work System Elements**

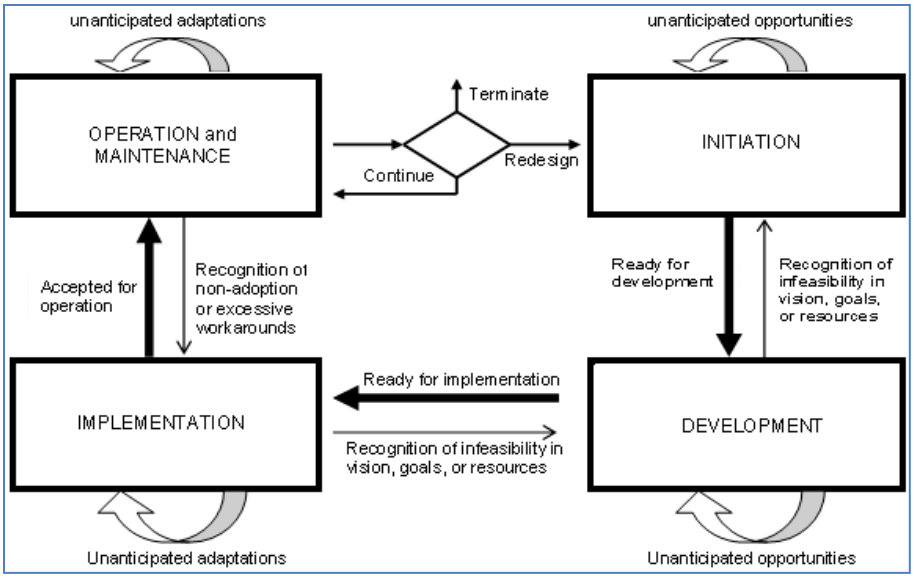


**Figure 2: Work System Life Cycle (Alter, 2013)**

## RELATING HIGH PERFORMANCE TEAMS IN AN IS WORK SYSTEM CONTEXT

Analyzing HPT themes and dimensions through the work systems theoretical lens explains the application of HPTs in an IS work environment. Consequently, through the components of Work Systems Theory—the Work System Framework, Work

System Elements and Work System Life Cycle—necessary "mini-lenses" may be provided to precisely fit HPT-related goals within specific IS work environments.

In particular, mapping HPT success dimensions, success themes, and failure themes with WSEs allow for analysis of HPTs in IS contexts. Table 2 shows the mapping of HPT dimensions and themes with WSEs.

The work system element "customers" supports the customer value success dimension. This is because of the consistencies across the definitions. "Products & services" support the customer value dimension because products and services provide a direct impact to the customer.

For operational value, "processes and activities," "information," "technologies," "participants," "infrastructure," and "strategies" are the supporting work system elements. These elements set up the operating stage, that is, the technical aspects and the workflows, required to produce and deliver the product to the customer.

For shareholder value, "environment" is the supporting work system element because the environment sets up the playing field for the work system where the shareholders (also known as owners of the company, government, regulatory, other stakeholders) have a direct or indirect influence on the work system.

| HPT Themes and Dimensions | WSE Lenses |
|---|---|
| **Success Dimension** | Dimensions analyzed through |
| Customer Value | Customers; Products & Services |
| Operational Value | Processes and Activities; Information; Technologies; Participants; Infrastructure; Strategies |
| Shareholder Value | Environment |
| Employee Value | Participants; Environment |
| **Themes of Success** | Successes analyzed through |
| Principle Driven | Strategies; Environment |
| Process Based | Processes and Activities; Strategies; Participants |
| Cultural Shift | Environment |
| **Themes of Missed Opportunity** | Failures analyzed through |
| Runaway Empowerment | Participants; Environment |
| Disillusioned Leader and Workforce | Participants; Environment; Strategies; Technologies; Product & Services |
| Chaos | Environment; Strategies |

**Table 2: Mapping of HPT Themes & Dimensions with WSEs as Lenses**

For employee value, "participants" and "environment" are the supporting work system elements. This is because the participants are the ones who perform the work, while the environment is the one that sets up the cultural atmosphere as to how the participants are remunerated based on their performance. The dynamics between these elements thus affect employee value.

The principle-driven success theme is supported by the "strategies" and "environment" element. The strategies and the nature of the environment explain why a work system operates as it does, which essentially guide and binds teams to carry out their work on a "predetermined" set of expectations.

Process-based success theme is supported essentially by "processes and activities," and "participants" elements. The "strategies" element is included because it explains why the work system process works based on higher business goals.

Cultural shift is supported by the "environment" element because the environment constrains or enables the playing field of the work system from various aspects—organizational, cultural, competition, technical and regulatory. The overarching influence environment brings determines the shifting direction a team may lean onto.

Applying similar analyses, the HPT themes of missed opportunity use the indicated WSE lenses influential in understanding each of the failure themes' characteristics. Runaway empowerment theme uses "environment" as it sets the playing field for which the "participants" or any team member may abuse the opportunity to mandate their own rules detrimental to the IS work system.

On the other hand, "participants," "environment," "strategies," "technologies," and "products & services" form the components that influence the overall atmosphere resulting to either the management's or work team's resistance to change due to unrealistic expectations imposed in the work system.

Lastly, the chaos failure theme looks through the influences of the "environment" and organizational "strategies" resulting to ineffective transitions due to lack of planning, causing confusion and conflict.

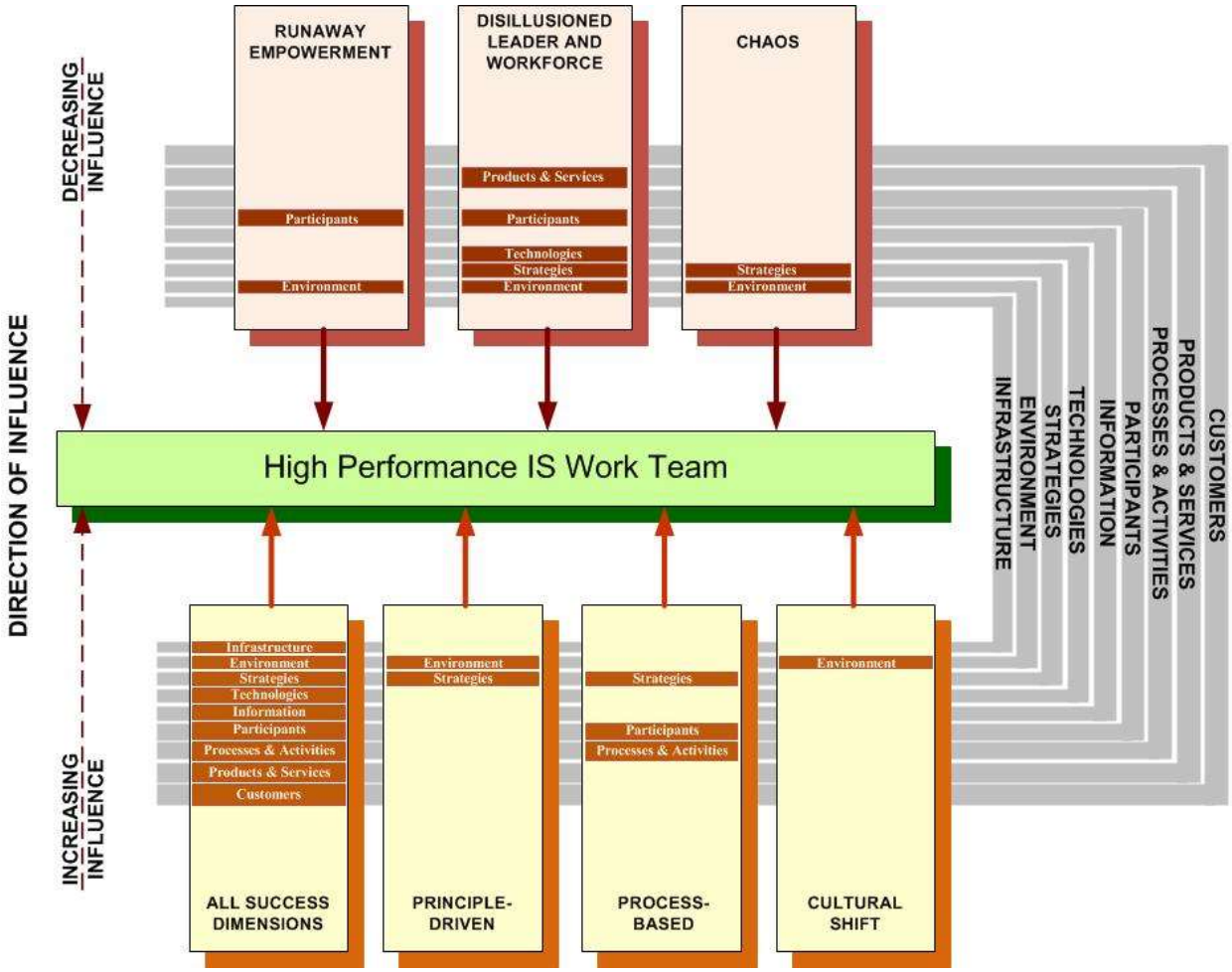


**Figure 3: HPT in the IS Work Environment**

The mappings on both sides of the spectrum (i.e., on success and failure themes and dimensions) may be used by practitioners and researchers to highlight behaviors which necessitate high performance characteristics in an IS work system (i.e., a static view). These may also provide the capability to draw necessary constructs and variables to derive propositions and hypotheses on a team level for future research.

On the other hand, the WSLC allows observatory activities to analyze the evolution of infusing HPTs in IS work environments (a dynamic view). For example, a member of the project management team, particularly the project manager,

may carefully align HPT behaviors at each development stage so that successful outputs are achieved as the project changes along the course of its duration. From unanticipated opportunities and adaptations perspectives, nuance behaviors may be highlighted while subtly-manifesting risks may be averted, so that management may formulate decisions to ensure success.

The combined views are summarized in a model shown in Figure 3. As the IS work system evolves along the WSLC iterations, the successful creation of a HPT depends on how well the detrimental effects of the failure themes are diminished or managed, and how well the qualities of the success themes are developed and nurtured by an aspirant HPT. This may be achieved through clearer perceptions of the work system provided by WSE lenses mapped to the themes. The eventual result is an IS work environment effectively and efficiently operated by a highly reliable, empowered work team.

Overall, therefore, aligned with predefined higher-level (departmental, organizational, etc.) success characteristics and factors, this model may effectively guide the formation of HPTs purposed to attain IS work system success goals, and consequently, of overarching business success goals.

## CONCLUSION

This study is inspired by the notion that there are skillful individuals who can form teams to provide high-value, reliable outputs no matter how complex business environments may be. These exceptional teams employ the right set of principles and attitudes, capable of adjusting quickly to sudden changes in complex business situations, and still producing exceptional outputs, also known as high performance teams.

Although HPT utilization has already been exploited in many specialized domains, HPTs have not been explored in IS. To successfully understand HPTs in IS work environments, we propose a model to analyze the creation of HPTs using the work systems theoretical lens, particularly, through the use of Alter's (2013) work system components: Work System Framework, Work System Elements and Work System Life Cycle. The mapping of HPT success and failure themes dimensions with the WSEs allow for disambiguation of IS-work system complexities while ensuring that related processes are geared towards achieving high performance results. In addition, the use of WSLC will allow evolutionary activities to be observed and analyzed as the IS-work system changes over time with its infusion, merging and maintenance of HPT characteristics, geared towards ensuring successful work system and business outputs.

## REFERENCES


1. Alter, S. (2013). Work System Theory: Overview of Core Concepts, Extensions, and Challenges for the Future, *Journal of the Association for Information Systems*: Vol. 14: Iss. 2, Article 1.
2. Buchholz, S. & Roth, T. (1987). *Creating the high performance team*. Hess, K. M. (Ed.). Wilson Learning Corporation. New York: Wiley.
3. Castka, P., Bamber, C., Sharp, J., & Belohoubek, P. (2001). Factors affecting successful implementation of high performance teams. *Team Performance Management*, 7(7/8), 123-134.
4. DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information systems research*, 3(1), 60-95.
5. Hanlan, M. (2004). *High performance teams: How to make them work*. Westport, Conn.: Praeger.
6. Landale, A. (Ed.). (1999). *Gower handbook of training and development*. Aldershot, Hampshire, England; Brookfield, Vt.: Gower.
7. Laszlo, A., Laszlo, K. C., & Johnsen, C. S. (2009). From high-performance teams to evolutionary learning communities: New pathways in organizational development. *Journal of Organisation Transformation & Social Change*, 6(1), 29-48.
9. Petter, S., Delone, W., & McLean, E. R. (May 01, 2012). The past, present, and future of "IS success". *Journal of the Association of Information Systems*, 13, 5, 341-362.
10. Tam, D. A., Chessum, T., & Leopold, J. (January 01, 2012). The challenge of innovation and the high-performance team. *Herd*, 5, 3, 66-73.
11. Thompson, F., Baughan, D., & Motwani, J. (1998). A case of innovative integration of high-performance work teams. *Journal of Workplace Learning*, 10(3), 157-4.
12. Tsai, C.-J. (September 01, 2006). High performance work systems and organizational performance: an empirical study of Taiwan's semiconductor design firms. *International Journal of Human Resource Management*, 17, 9, 1512-1530.
13. Van Buren, M. E., & Werner, J. M. (1996). High performance work systems. *Business and Economic Review*, 43(1), 15-23.
14. Yeatts, D. E., & Hyten, C. (1998). *High-performing self-managed work teams: A comparison of theory to practice*. Thousand Oaks: Sage Publications.