Applying HCI Concepts to Human Resource Technology: Bridging Three Fields

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Abstract

In this paper, I discuss the need for scholars from AIS SIGHCI and ACM SIGCHI to augment the theories and methods by human resources (HR) scholars to bridge these three fields to design more effective human resource information systems (HRIS). Without integrating principles and theories from these multiple fields, it will be challenging to develop principles and theories to guide HRIS designers and ensure not only strong technical design, but also strong employee and organizational outcomes. Therefore, this paper discusses how theories from HCI and IS may help organizations design more effective HR systems.

Author Keywords

Human Resource Information Systems; e-recruiting; e-selection; e-learning; Interface Design

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous: J.4 [Social and Behavioral Sciences]: Psychology, Sociology

Introduction

HRIS are information systems (IS) that store, manipulate, and distribute data regarding employees

and the HR function. Unlike traditional IS, HRIS store more personal and career affecting employee data, can affect an applicant's decisions to work with the organization, and their success is dependent upon both internal and external stakeholders [7]. In addition, the outcomes associated with an HRIS can also include non-technical, HR and organizational outcomes such as applicant attraction, who is selected by the organization, training outcomes, and job and organization satisfaction [9]

Despite the critical role these systems play in organizations, those conducting research on these systems (e.g. management and psychology scholars) often lack the technical knowledge to fully understand the implications of interface design and user interaction considerations, and often view the HRIS as a static variable or "black-box" in their models [7].

In the spirit of this workshop, I argue that only by integrating HCI theories, models, and design principles with HR and management theories, can we design HRIS that support employee and organizational needs. Bridging the gaps between AIS SIGHCI, ACM SIGCHI, and HR, will allow us to develop models that more fully articulate how technology design and user interactions can affect non-technology, employee and organizational outcomes

In support of these arguments, the paper briefly discusses how HCI design theories and principles can improve employee and organizational outcomes in recruitment, selection and training, and illustrates opportunities for HCI scholars to use existing theories and principles to contribute to these research streams.

Recruitment
The primary goal of recruitment is to identify and recruit a diverse applicant pool, and the primary mode of recruitment today is digital. Research suggests that the aesthetics, ease, and navigability of the recruitment website may affect not only applicant satisfaction and use of e-recruiting, but also their perceptions of the organization, and the likelihood that they will apply for a position [1].

Unfortunately, the current definitions of navigability, ease, and aesthetics used by HR scholars lack the rich nuance and depth of those utilized in IS and HCI. In addition, with the ubiquity of mobile computing, applicants now access recruitment apps and websites over multiple types of devices (e.g. desktop, mobile, phone, etc.) and expectations for ease of use, navigability, and aesthetics are likely to differ across these platforms. HCI scholars have the expertise to inform HR research and to help develop principles that improve interface quality across these diverse devices [3], and to assess how different design configurations may affect applicant perceptions of the firm, their fit with the firm, and their likelihood of applying for a job.

In addition, research on recommendation agents [10] can help design better-customized experiences for applicants. Customized experiences are particularly helpful in e-recruiting because they help applicants understand organizational fit and can reduce the number of poor fit applicants [5].

Selection
The major goal of employee selection is to select the most talented, best-fit individuals from amongst those who have applied, and to do so in a way that does not

make applicants feel negatively about the hiring organization. As organizations increasingly incorporate technology into selection, it is critical that selection tests online remain equivalent to paper-pencil versions to both align with legal requirements and to ensure high quality hires. However, research suggests that paper-pencil and online selection tests may not be equivalent. Delivery medium can affect candidates' performance and affective reactions to both the test itself and the organization [2].

Thus, an understanding of technical and behavioral theories and principles from HCI can improve the likelihood that new selection methods are equivalent to traditional selection tests. For example, theories such as media synchronicity [4] can help designers understand how different interview mediums (e.g. face-to-face, phone, and video) may affect interviewers' evaluations of candidates, and how designers may account for these differences when designing online interviews. In addition, usability principles can drive design and testing of selection tests in new media. In addition, new technologies such as virtual reality (VR) can potentially improve the fidelity and realism of selection tests [11]. However, for this to happen, researchers must understand what aspects of the virtual interface affect candidates' perceptions of "realness" of the virtual environment, which are performance and assessment oriented, and which affect employee perceptions of the test and the organization.

Finally, a number of software vendors offer tools that allow employers to assess the potential "fit" of candidates with the organization. Given our knowledge of interface design, social responses to computing, and decision-making, HCI scholars can assist HR scholars in understanding how different layouts and different words and prompts may affect HR decisions, the extent to which employers follow recommendations, and employee's satisfaction with process and hiring outcomes [12,13,14].

Training
Organizations are increasingly turning to e-learning meet training needs while maintaining costs. In a review of the e-learning literature, Johnson and Brown [6] found that both technology and pedagogy design considerations can affect e-learning processes and outcomes. However, much of this research has been conducted using more traditional delivery systems (e.g. desktop).

Recent advances in mobile capabilities, and in augmented and VR have brought with them a number of design opportunities and challenges that HCI research can inform. For example, given that trainees find it challenging to navigate documents with financial and other precise data [8], HCI theories and principles such as eye-tracking, usability, and comprehension can help design interfaces that can adapt display features based upon device used or training needs.

In addition, HCI scholars can inform training designers how to use augmented and VR to create high fidelity training simulations in areas as diverse as sales, leadership, and medicine. Finally, HCI researchers can help designers understand what characteristics in virtual environments contribute to different types of outcomes.

Conclusion

In this paper, I suggest that for the design of HRIS, it is critical that we not only bridge HCI scholarship between ACM and AIS scholars, but that we also bridge the gap with HR. Only by bridging the divide between the technical and behavioral issues underlying the effective design of HRIS can we fully address the impact of HRIS on key HR, employee, and organizational outcomes.

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