

## A Study of Technology in Human Resource Management

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**ABSTRACT :** Electronic technology or information technology has revolutionized the way in which organizations perform their day-to-day operations, particularly so in the Human Resource Management domain, where IT has redefined the way in which HR departments perform their operational, relational and transformational functions. Electronic technology is having a tremendous impact on HR activities. When Electronic tools are implemented in HRM then it is termed as EHRM / HRIS / Web-based HRM etc. Some of the E- tools used in HRM include Web- based Employee /Manager Self Service tools, workflow technologies, vendor management systems, applicant tracking systems, hiring management systems, E-recruitment software, internal mobility software, Performance appraisal management software, succession planning software, personnel development software, career planning software, package review software, executives and key people management software, Payroll and compensation management software, employee monitoring system, SAP and a host of others. Many global companies have started using SAP (Systems, Applications Products), an integrated software technology instead of separate applications for each department.

The focus of the present study is to provide a conceptual framework to the role of E- technology in the Human Resource Management by explaining about various E-tools used in the multitude functions of HRM. It also identifies critical success factors due to e-tool applications in HRM.

**KEY WORDS:** Electronic technology, Operational functions, transformational functions and relational functions, E-tools, Web 2.0, SAP, and Human Resource Management.

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### I. INTRODUCTION

The Pace Of Human Resource Management In Organizations Today Is Much Smarter And Faster Than That It Was About A Decade Ago. This Is Mainly Due To The Integration Of E-Technology Tools Into HR Practices. E-Technology Refers To The Study, Design, Development, Implementation, Support Or Management Of Computer-Based Information Systems, Particularly Software Applications And Computer Hardware. It Deals With The Use Of Electronic Computers And Computer Software And Hardware To Convert, Store, Protect Process, Transmit, And Securely Retrieve Information. The Application Of E-Tools Has Brought In Tremendous Productive Changes In HRM. HRM Functions Are Generally Categorized Into Three Tiers Namely Operational, Relational And Transformational Functions. Operational Functions Of HRM Are Also Known As Administrative Functions. They Include- Payroll And Benefits Administration, Work-Time Management, Human Resource Information System, Learning Management System, Performance Recording, Employee Self-Servicing, Etc. Relational Functions Of HRM Are Concerned With Activities Supporting Business Processes Like Management, Operational And Support Processes By Means Of Training And Development, Recruitment, Performance Management, Industrial Relations, Grievance Redressal, Conflict Resolution And Others. Transformational Functions Refer To The Strategic Functions Of HRM Like Knowledge Management, Succession Planning, Career Planning, Talent Management And Retention, Etc. E-Technology Tools Facilitate The Effective Functioning Of All The Aforesaid HR Activities.

Apart from these customized tools there are other tools like Web 2.0 applications which are accessible via internet connectivity. It has a wide range of applications like cloud computing, data, video and photo sharing, podcasting, RSS feeding, widgeting, Social Networking, content rating, micro-blogging, blogging and others which can be leveraged by HRM. The benefits of Web

2.0 to HRM are discussed under section four of this paper. The aim of the present study is to understand the role of E-Technology in managing human resource activities in the organization. It also focuses on identifying the critical success factors resulting from E- tools application in HRM. Apart from this, it also discusses some of the benefits of Web 2.0 applications and SAP in HRM. The paper consists of five sections: First Section is an Introduction to the study. The next section deals with the review of literature which focuses on the related work undertaken in the same field of study.

The third section enumerates the Objectives of the study, its scope, various sources of data and research methodology adopted for analysis of data. The fourth section reports and analyzes e-tool applications in HRM. The fifth section presents conclusions drawn on the basis of analysis.

## **II. REVIEW OF PREVIOUS LITERATURE**

Innumerable research studies have been undertaken to understand the technological implications on HRM in general. The Present review deals with some of the noteworthy empirical studies

found through scholarly Internet Search engines like scholar.google.com and several online data bases like INFODATA, docstoc.com, wikipedia and others) related to the impact of E- technology on Human Resource Management.

**Ruel et al, (2002)** say that, the term e-HRM was first used in the late 1990's when e-commerce was sweeping the business world. E-HRM is internal application of e-business techniques to add value to the management through more effective and efficient information flow and is a way of doing HRM

**Stefan Strohmeier (2007)** has quoted in his review study that rapid development of the Internet during the last decade has also boosted the implementation and application of electronic Human Resource Management. According to him Surveys of HR consultants suggest that both the number of organizations adopting e-HRM and the depth of applications within the organizations are continually increasing. In addition, an escalating number of practitioner reports provide anecdotal evidence that e-HRM is becoming increasingly common and may lead to remarkable changes.

**Paul D. Hamerman et al, (2008)** in their empirical studies said that technology solutions can help tech Savvy human resource professionals to strategically manage through the crisis and prepare as the climate shifts to the upside. Trends that we will follow in 2009 include managing and developing talent, embracing HRM analytics, Web 2.0 adoption, and HR technology strategy.

**A. Sanayei & A.Mirzaei (2008)** say that E-HRM applications have a significant positive effect on the effectiveness of HRM activities. This means that deploying E-HRM tools impacts on the effectiveness of HRM activities indirectly. For implementing E-HRM tool, first we must identify the goals and strategies of E-HRM and then provide the infrastructure in organization such as information technology and telecommunication systems. It is essential to consider the limitations of implementing E-HRM such as hardware, software, employees' skill and financial Capabilities.

## **III. OBJECTIVES, SCOPE & METHODOLOGY OF THE STUDY**

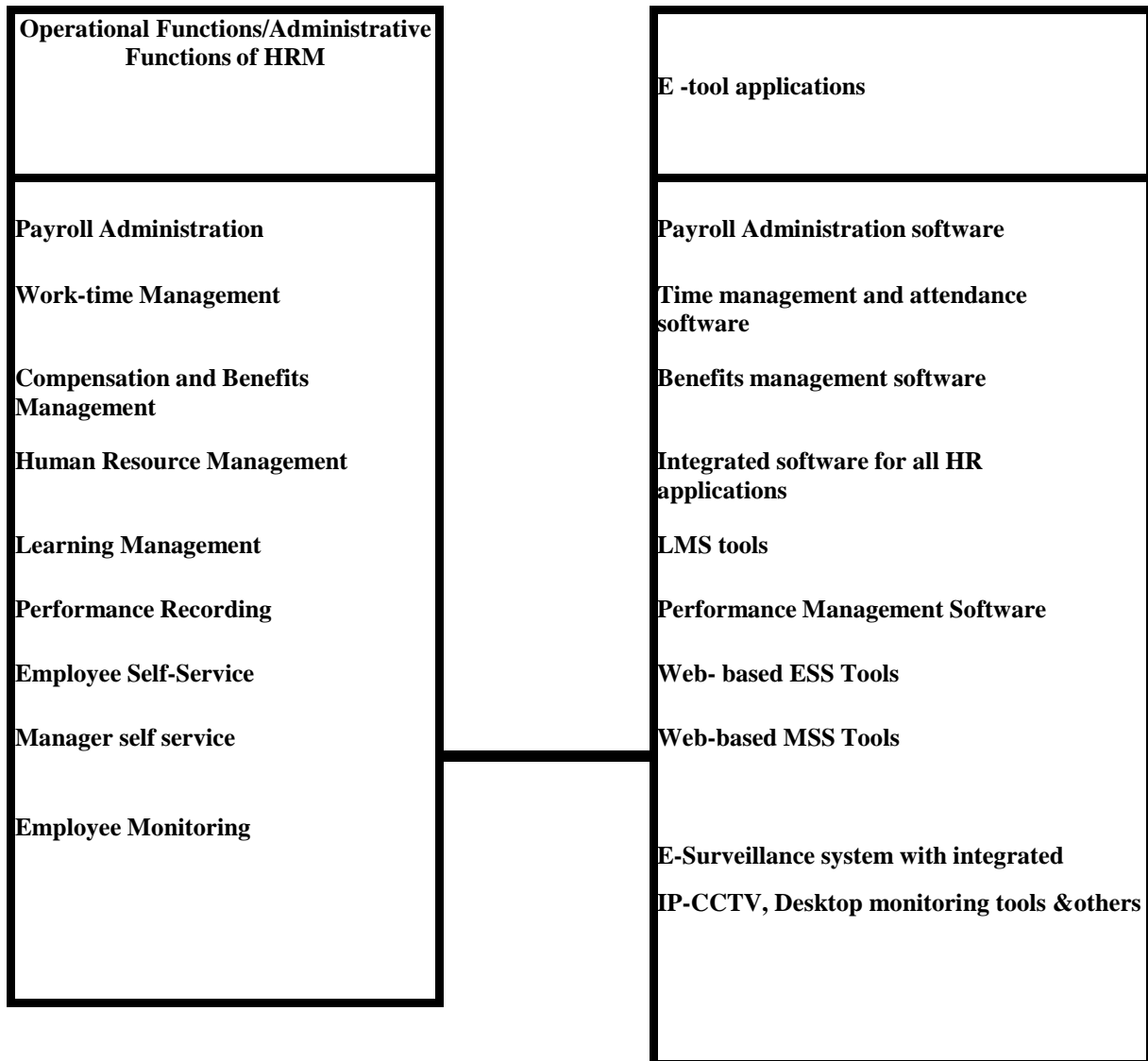
1. To understand the role of E-Technology in managing human resource activities in the organization.
2. To understand the benefits of using Electronic tools in HRM.
3. To enumerate the advantages of Web 2.0 tools to HRM.

The scope of the present study includes the Software applications in various operational, relational and transformational functions of Human Resource Management. It also includes the advantages of SAP & Web 2.0 tools to HRM.

The research method used for the study is the descriptive research method. The study intends to present facts concerning the current application of Electronic tools in HRM through observation and analysis of the various sources of secondary data. An Endeavour is made to explain the application of Web 2.0 tools in Human Resource Management. Data is obtained for the present study from the secondary data sources like- Research journals, books, magazines, internet search engines and websites such as Google scholar.com, article base.com, docstoc.com, Authorstream.com, Scribd.com and several others.

**Role of Electronic Technology in HRM: An Analysis :** This section analyses the role of electronic technology in human resource management in the organizations with the help of data obtained from various sources like journals, websites, articles, magazines and reviews. The model constructed below indicates the various Operational functions of HRM and the e-tool applications that support such functions.

**Fig (1) E-Tools Used For Operational Functions of HRM/Transactional Functions:**



Figure(1) indicates the various software applications in HRM. The payroll administration tool automates the pay process by gathering data on employee time and attendance; it then calculates various deductions and taxes, and generates periodic pay cheques and employee tax reports. Data is generally fed from the human resource and time keeping tools to calculate automatic deposit and manual cheque writing capabilities. This tool can encompass all employee-related transactions as well as integrate with existing financial management systems.

The work time and attendance tools gather standardized time and work related efforts. The most advanced tools provide broad flexibility in data collection methods, labor distribution capabilities and data analysis features. Cost analysis and efficiency metrics are the primary functions.

The benefits administration module provides a system for organizations to administer and track employee participation in benefits programs. These typically encompass insurance, compensation, profit sharing and retirement.

The HR management module is a component covering many other HR aspects from application to retirement. The system records basic demographic and address data, selection, training and development, capabilities and skills management, compensation planning records and other related activities. Leading edge systems provide the ability to "read" applications and enter relevant data to applicable database fields, notify employers and provide position management and position control. Human resource management function involves the

recruitment, placement, evaluation, compensation and development of the employees of an organization. Initially, businesses used computer based information systems to: produce pay checks and payroll reports; and to maintain personnel records;

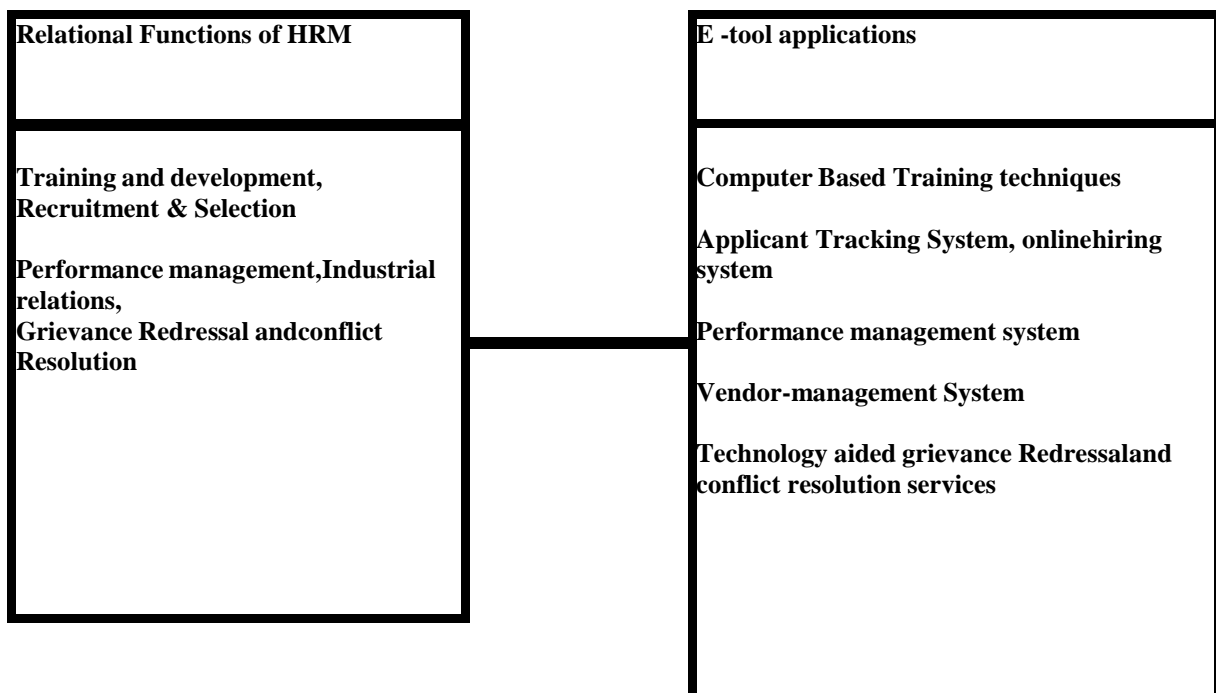
**But now they are finding application in many more areas. :** Learning Management System tools help in defining designation, roles, responsibilities, job profiles; etc. It facilitates discussion forums, announcements, surveys, news articles and much more. It also allows to create content categories with powerful features to upload and store content that can be quickly located by the authors for their reference. It helps users to attach any kind of content either in PDF, DOC, PPT, images, ZIP files, chat items, etc.

Performance management software automates performance management and documentation process and requirements and makes it easier and more efficient to track and monitor performance. The appraisal reports are linked to the reward system so as to reward the employee as per his performance rating.

Employee and Manager Self Service: As HR shifts away from paper-based processes, the use of self-service functionality as part of a comprehensive HRMS should extend benefits to employees, managers, and HR staff alike. In addition to being user friendly and readily accessible (e.g., via a web browser from a desktop or centralized kiosk), self-service provides access through web-based applications for employee self-service (e.g., travel reimbursement, personnel data changes, benefits enrollment, enrollment in training classes), and manager self-service (e.g., initiate a personnel action, access authorized information for employees they supervise).

Employee monitoring system helps in centralization of the control of desktop of the employees in order to live view and monitor the employees tasks. Intranet enabled CCTV also helps the organizations in surveillance of their employees so as to increase productivity, efficiency and effectiveness. It also avoids company data theft and fraudulent activities by employees.

**Fig (2) E-Tools Used For Relational Functions of HRM:**



E-learning tools/training tools like Computer Based Training programmes foster skill and competence development in the employees. Some of the E-tools that facilitate employee training and development include Power-point presentations, online-Live instructor directed face-face training, webinars, tele-seminars, self-directed study, e-books, online tutorials, CD-ROM or DVD based training-tools and Web 2.0 applications facilitate repeated learning and they are accessible at any time.

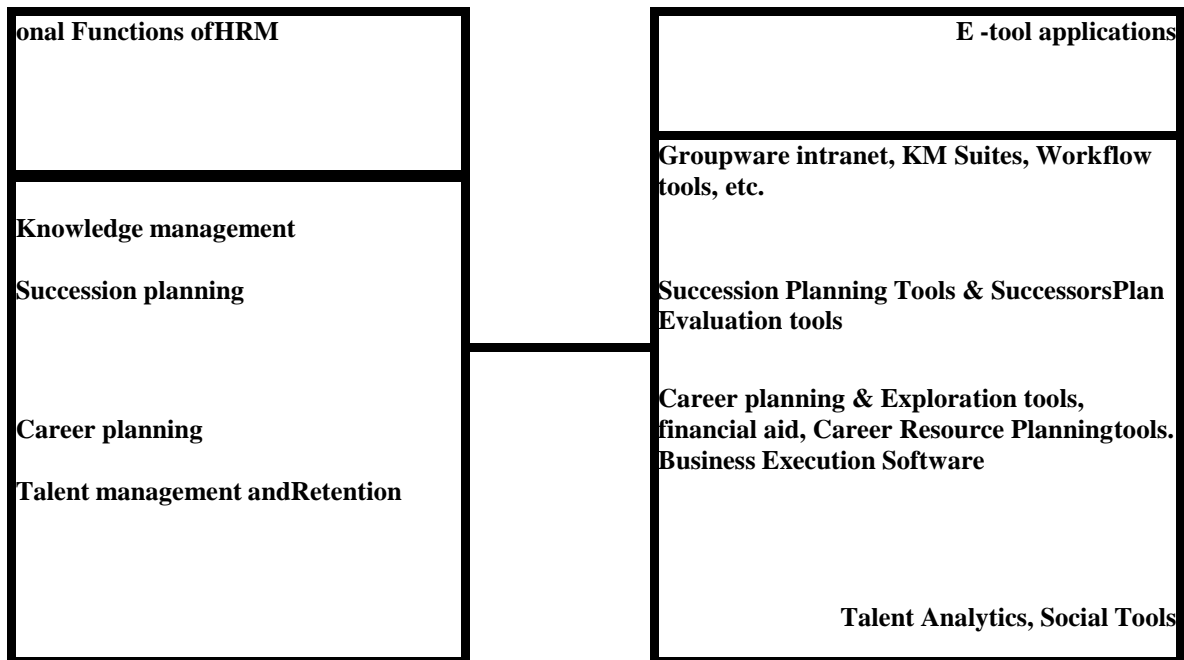
E-recruitment and selection are cost-effective, time saving devices which will widen the scope of search. They are faster and clearer means than paper procedures. Some of the E-recruitment sources are job portals, job boards, Social networks and forums, employer websites and professional websites.

Resource Data mine/Applicant Tracking System (ATS) is an innovative fully customized web based application that effectively integrates all aspects of the hiring process, ensuring consistency & transparency by streamlining and refining your recruiting and hiring process. As a recruiting tool, it incorporates the power, accessibility and reach of the web using an advanced Artificial Intelligence technology. It is designed to fully automate every step of the recruiting process and effectively build a superior workforce at an enterprise level,

To maintain industrial relations vendor management system can be used. It is a web based application that helps organizations to manage and procure staffing function temporarily or permanently. It is useful for billing, order distribution and advanced reporting features.

There are several online counselors and consultants whose services can be availed for grievance Redressal and conflict resolution.

**Fig () E-Tools Used For Transformational Functions /Strategic Functions of HRM:**



Knowledge Management is the explicit and systematic management of vital knowledge - and its associated processes of creation, organization, diffusion, use and exploitation - in pursuit of business objectives. Several tools are used for Knowledge management. Some of them include- intranet, groupware, KM suites and others used as sources for data mining. Concept Mapping and creativity tools are used for thinking. Search engines, data mining, intelligent agents and such other tools are used for gathering knowledge. For organizing and storing knowledge data warehousing, XML, metadata tools, etc. are used. For knowledge worker support, case based reasoning, decision support, workflow, community support and other applications are used. Apart from the aforesaid tools there are many application specific e-tools like Customer Relationship Management, competitive intelligence tools, etc.

Succession planning tools like successors plan evaluation tools help in identification of succession planning options, sequencing of the steps for conducting systematic evaluation, etc. Career planning tools such as online self-assessment tools, tools to match the employee profile with suitable job profile and then pick up the training programmes according to the competency requirements. Business Execution software allows seamless integration across performance and talent management initiatives.

Talent management tools include social tools to build connections and drive adoption of talent management initiatives, talent analytics to drive planning and decision-making, and profile and talent pool management that combine the elements of training, performance and compensation.

**Role of SAP in HRM :** Systems Applications Products Enterprise Resource Management Human Capital Management (SAP ERP HCM) is a comprehensive, integrated human resources management solution that delivers unmatched global capability. SAP ERP HCM gives organizations in all industries worldwide the tools needed to manage their most important asset: people. The solution helps executives, human resources (HR) professionals, and line-of-business (LOB) leaders to forecast, plan, and hire the best talent, as well as cultivate the skills of and train their workforce. It facilitates automation of core HR processes, such as employee administration, payroll, and legal reporting, increases efficiency and supports compliance with changing global and local regulations.

SAP ERP HCM helps organizations throughout the world to increase their performance by helping to ensure an efficient, focused, and engaged workforce. With integrated building blocks and an unmatched partner ecosystem, SAP ERP HCM supports shared services and business process outsourcing – further reducing cost and risk for organizations .

**Advantages of Web 2.0 to HRM :** Bill Gates has rightly quoted in 1991 that –“The internet is a tidal wave. It will wash over nearly all industries, drowning those who do not learn to swim in its waves”. With the advent of web technology this statement seems to be most apt. There are many transformations in the sphere of HRM. Web 2.0 tools like cloud computing, virtual worlds, knowledge sharing, wikis, podcasting, blogging, online social networking, photo and video sharing and content rating have enabled faster and effective communication between organizations

Web 2.0 refers to the web applications that facilitate interactive information sharing, interoperability, user centered design and collaboration on the World Wide Web. Some of its benefits to HR M are-

- Web 2.0 applications help online collaboration of HR professionals.
- .It is useful to attract, develop and retain top talent.
- .Sparks creativity of the employee and hence facilitates employee engagement.
- Promotes cordial interpersonal relations among the workforce.
- Social networking sites like linkedin, facebook, twitter, etc. can be used for applicant tracking,
- Podcasting tools can be used for preparing presentations for employee training sessions to hold on to their attention
- Useful for knowledge, photo, ppt and video sharing.
  
- Facilitates video conferencing audio conferencing and information sharing among HR professionals
- Improves the communication skills of employees
- Facilitates recruitment and hiring of employees and executives
- Very useful for training and developing employees. It is useful to update employees about latest trends in the industry
- Social Networking using Web 2.0 relieves employees of stress and fatigue.

#### **Critical Success Factors Due to E-Technology in HRM**

- E –Technology helps organizations to enhance productivity
- E-tools are extremely useful for training and development
- They enable effective performance management,
- They facilitate effective knowledge management
- They facilitate effective compensation and benefits administration
- Useful for building the skills and competencies of the employees
- Most useful for recruitment and hiring online
- Facilitates effective interpersonal communication
- Its of significant help in the management and retention of talented employees
- Useful for career planning and succession planning.

- It gives effective tools for monitoring employees
- It is of significant help in payroll maintenance
- Facilitates all HR activities like employee monitoring through e surveillance and others
- Web 2.0 is becoming institutionalized
- Organizations are moving towards integrated Human Resource Management System rather than using standalone applications.
- E-recruitment has increased by more than 50% in the organizations.
- Provides effective tools for retaining and managing the talented workforce.

#### **IV. CONCLUSION**

Through the study it has been observed that there are specially designed e tools for every function of HRM, whether it is operational, relational or transformational in nature. The productivity, effectiveness and efficiency of HR activities have been enhanced due to use of electronic technology in organizations. There is a transition from use of stand alone applications for individual HRM functions to integrated approach for linking all HR functions; this has been enabled due to SAP ERP HCM technology. The Web 2.0 applications are becoming institutionalized and their applications seem to be very beneficial to the organizations. Thus HRM has witnessed mind boggling changes due to E Technology revolution in organizations. It has added value in transactions by improving efficiency of transactional services through effective employee monitoring, time management and performance management.

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