An Investigation on information technology and core business areas

Raheela Firdaus, Yang Xue and Li Gang and Ahmed Nawaz

School of Management and Economics (Management science and Engineering), North China University of Water Resources and Electric Power, Zhengzhou, 450045, China

Abstract:

Purpose-In this paper author reviewed the impacts of information technology in different area of business like finance, Human resource management, lean management and risk management. This paper discuss information technology in all these area one by one also software in these areas. There is a great change seen in finance industry due to information technology. We focus on the effects of information technology on the risk management which has vital impacts on business functions and predicting the future success of an organization. Risk management mainly deal with investigation of the potential threats, measuring the vulnerabilities, monitoring and controlling them in the business to achieve the goals of business.

Design/methodology/approach-

The author investigated the companies, software solution providers, software platforms, internet sources, official websites of software and their influence in major business areas like Finance, Human Resources Management, Lean Management, IT integration, and lead-time reduction, Computer integrated and Risk Management

Purpose: To achieve the purpose, study uses internet sources, company's official websites and previous literature to find different software which are currently best suitable to companies according to their size range from small, medium and large organizations.

Findings- The authors of this paper first investigated the best software match with the organizations. Needs and then further identified the core business operation Finance, HR, Lean management and risk management having compatible software solution.

Originality/value- This study very keenly analyses the .software their uses and company's satisfaction level with software.

Keywords: (Business, Information technology, Finance, HR, Lean management, risk management)

Date of Submission: 01-09-2021 Date of Acceptance: 15-09-2021

Date of Submission. 01-07-2021

I. Introduction

Many organizations achieve higher benefits from lean to short the lead time by using ERP. Information is an important asset of any organization so information system and information technology infrastructure is now getting more popular in business. Now we focus on the effects of information technology on the risk management which has vital impacts on business functions and predicting the future success of an organization. Risk management mainly deal with investigation of the potential threats, measuring the vulnerabilities, monitoring and controlling them in the business to achieve the goals of business.

To increase the output of current services to execute new ones and for their availability in fresh ways information technology has a key role. Banks are depending greatly on information technology. The most important service used by the banks is ATM through this machine banks are able to facilitate their customers with cash by 24 hours throughout the world. Banks also facilitating their clients through personal computers to transfer funds, pay bills and order the purchase [01]. For the success of a company human resource department is very influential. With the advancement in new technologies the role of Human Resource managers is changed from past. There is an efficient behavior seen in the process of hiring, progressing and consumption of employee and resources. By shortening the lead time company can response to clients need timely by making the business more clients oriented [2].

To increase the competitive capabilities it grow the level of standardization,

Formalization and also integration [3]. Risk management has its effects on every parts of the organization activities like planning, purchase, productions and delivery. If people utilize their knowledge to understand risk and use their knowledge to avoid them then it has great impacts of overall outcomes of the company.

II. Influence of Technology in Finance

Transfer of information will be very important for business in upcoming times. Currently ATM machines are using network services to transfer information of clients and funds. In future business will use sophisticated technology like relays, video cable, fiber optics and cellular radio. A sharp fall in computer's price will be beneficial for small business to get more benefits from information technology in financial services [01].

Clients can also order banks to pay bill or to purchase securities by using personal computers. On a remote exchange an order for bonds or sell stocks and buy stocks can be executed very easily. Clients can also investigate their financial position to take decision on investment from home.

Mostly companies may demand direct deposit of payroll checks. Alternatively business can give an opportunity to their employees the options of writing checks against salary in company's account in return for being paid every day.

Software	Developer	Features		Application Area	
Account Mate[04]	Account Mate Corporation USA	SoftwarePowerful, Flexible, Account Mate LAN, Cloud	Account Mate	Business like aircraft distributors, to apmanufacturers, ho authorities, and internation museums	pparel ousing
CYMA [05]	CYMA Payroll And Software Solutions.	Accountinga full suite of user software modules, ro industry leading advanced customization	bust reporting, security, and	mid-sized businesses	
Intacct [06]	Intacct	accounting, contract revenue management fund accounting,	management, t, project and inventory asing, vendor l consolidation	public companies	
Red Wing Software [07]	RED WING	Offers Customer Ca	re Plans with times, so you	small to mid-sized busin agribusinesses, municipals nonprofits in North Americ	s and
SAP [08]	SAP	general ledger, m reporting, integrat payables, receivables,	ing assets,	Medium size and Large Business	Size
Traverse ERP [09]	Open Systems, Inc	FLEXIBLE, manage your organization processes in one single	's business e ERP system		
Yendo [10]	YENDO	Only CRM and Accou	inting Software	All Size	
FreeAgent [11]	FreeAgent	manage your business	books	small businesses and freela	ncers
NetSuite [12]	oracle	solution, faster d with real- reporting,	Enterprise Planning (ERP) Drive better, ecision-making time data and and ed dashboards	All Size Business	
Oracle [13]	ORACLE	create detailed, reconcilable accountin		All size business	
Kashoo [14]	Kashoo	Easy to use for Novice	e users	Small business	

III. Role of IT in HR

The HR team should precisely use information technology for rising competencies of the people to face these challenges for the development of the business as well. The purpose of information technology can create value-addition and lift the status of HR team as a whole. The technological progress has been initializing force for making new responsibilities for HR functions to make business more beneficial. Human resource information technology is helpful for HR team to put databases together and facilitate new methods and updates. It is simplest way of accomplishing of HRIT for everyone, anytime and anywhere within the company. It can overcome the burden of HR team.

Now the focal point of HR team is translations of data, critical planning, professional planning, employee awareness, assessment and response. There is a study by [15] which focus on utilization of HRIT by the team of HR in SHRM. The results explain that information technology can minimize routine work and permit flow of information in a better way.

Information technology initiates more positive effects on in human resource functions. A number of software are now developed to offer services in areas related to human resource such as e-employee hiring system, electronic performance evaluation, electronic compensation. Through software they can hire employee by doing interview from remote location using video conferencing systems [16].

Technological Tools used by HR Professionals

A number of tools are explained by [17] including database management system, excel sheets, Data mining, information system such as decision support system, expert system, technologies to transfer information, Local Area network, Wide area network

Software	Developer	Features	Applications
BambooHR [18]	HR Software	popular and reliable online HR software service, Best HR Management Software Award for 2017	small and mid-sized businesses
Freshteam [19]	HR for growing business	quality candidates and retain control over the hiring process, and do so in line with your own	
		rules and policies	
Gusto HR [20]		Performance management in a modern, easy-to- use console. The platform in enriched with industry-leading benefits and payroll administration features	businesses
Trakstar [21]		employee appraisal software designed to help organizations and HR professionals track employee performance as well as manage feedback, goals, and reviews.	
Zoho People [22]		winner of our 2015 Best HR Management Award. It's a simple HR platform for employee management operations including records and time tracking	
OnPay [23]		OnPay is an award-winning solution taht combines the latest internet technologies to give you a simple yet robust alternative to high priced, traditional payroll service	businesses
BizMerlin [24]		Winner or 2016 Rising Star award. HR management solution for small and medium teams that lets you efficiently hire, onboard, manage, allocate and retain your team members.	enterprises
ClearCompany [25]		ClearCompany provides talent management software to help businesses find, hire, and manage talent.	
ICIMS Talent Acquisition [26]		iCIMS Talent Acquisition is a software suite that enables organizations to use mobile, social, and video technologies to manage their entire talent acquisition lifecycle	

IV. Effects of information Technology in Lean Management

There are two main approaches used in an organization to overcome lead time. First one is information technology integration inside the business and second approach is among the businesses which are called just in time. Information technology helps to transfer information electronically between the business and among businesses. An estimate is increase in IT spending from \$417 to \$479 billion from 2005 to 2008 [27]. Information technology has inspiring impact of on firm outcomes such as lead time. Just in time practices decrease the waste and fulfill customer needs on time. A company can facilitate client with fewer stock and quick response [28].

V. LEAN/JIT PRACTICES, IT INTEGRATION, AND LEAD-TIME REDUCTION

To assist in supply chain Toyota implemented JIT by using SAP in the 1990. The association between lean and information technology was discussed by [29] using three case studies. To demonstrate the association between lean and IT a high-tech case study was used by [30] to show performance of a business. A number of practices are there to decrease the time of process like Pull system, Removal of blockage, agile manufacturing time [31]

I.T Integration and Lead-Time Reduction

Faster client feedback and better output of the system were the main reasons of success observed in U.S manufacturing system by using computer integrated technology [32]. These intelligent systems are very helpful to forecast the needs of future which result in increased responsiveness. Lacking on information technology pull system can only use one way link. By using information technology in internal and external integration the order information can transfer through the whole company timely which reduce lead time in result. Dell using IT system to pull order information .To decrease lot-size CISCO is also using IT systems [29]

VI. Computer integrated manufacturing

By replacing the functions of manufacturing process by list of automatic technologies in a systematic way is called computer integrated manufacturing. There are three main parts of CIM. One of them is product design and manufacturing process planning, Monitoring and third is production itself.

Software	Developer	Features	Applications	Platforms
NetSuite [12]	NetSuite Manufacturing	order management, customer relationship management (CRM), and e-commerce platform,cloud base		Windows, Mac, Linux
Fishbowl [33]	Fishbowl Manufacturing	inventory control, material requirements planning (MRP) and job shop floor control/manufacturing execution		Windows, Mac, Linux
E2 Shop [34]	Shoptech Corporation	scheduling, purchasing, shipping, customer management and accounting	Small and Medium Size	Windows, Mac, Linux
Global Shop [35]	Global Shop Solutions	customer relationship management, inventory management, accounting, scheduling, job costing, agile project management, designing and more		Windows, Mac, Linux
ECI M1 [36]	ECI M1 ERP Software	available on-premise or via the cloud, that automates financials, inventory, production, sales/quoting and production planning		Windows
Infor VISUAL [37]	Infor VISUAL ERF Software	end-to-end functionality built for manufacturing organizations looking for a complete solution that supports the entire operational lifecycle, from planning to sourcing creation to delivery.		Windows, Mac, Linux
IQMS [38]	IQMS MES Software	manufacturing operations functionality, including accounting, CRM, purchasing, EDI, reporting and business intelligence, production planning and scheduling, and production, real-time shop floor control, quality, supply chain, and warehouse and shipping management		Windows, Mac, Linux
Jobboss [39]	Jobboss Shop Management Solutions	quoting, order processing, advanced scheduling, inventory, payroll, accounting, quality (ISO and ASI), data collection and mobility.	siz	Windows, Mac, Linux

		product lifecycle	requiremen			Windows
Priority [41]	,	cloud-based manufacturing, l time and attenda project managen	ance, business	nan resources,) large	Windows, Mac, Linux

VII. Information Technology and Risk Management:

Risk management is a process of identifying risk, assessing and controlling them by using methods McCaughey et al. [42]. Hardware and software are data transfer tools can assist to overcome threats and maintain risk in a good way Loudon [43]. The sensitive information should only be provided to authorized groups or persons [44]. Modern information technology tools are helpful to keep vital information about project and lesson learned and apply this knowledge to new projects which can save time and results of new project will be more efficient and effective [45,46].

The main cause to manage risk in a business is to secure the goals and assess of the business. The aim of identifying risk is to help management in finding where to direct the assets. There are four major actions are adopted to complete this process, mitigation, transference, acceptance and avoidance SECURITY THREAT MODELING AND ANALYSIS: A GOAL-ORIENTED APPROACH. Finding risk has a great importance in designing overall security model for a system.

Software	Developers	Features	Application Area	Platform
Optial SmartStart [47]	Optial	Automate the process of capturing inherent, residual and target risk evaluations		Cloud,, Web, Windows
Synergi Life [48]	DNV GL	managing all non-conformances incidents, risk, risk analyses, audits assessments and improvement suggestions	,	Cloud, , Web, Windows
TeamMate audit Management [49]	Wolters Kluwer	risk assessment, scheduling planning, execution, review, report generation, trend analysis		Cloud,, Web, Windows
Audits.io [50]	Plan Brothers	security, quality, H&S, environmental and facility audits, assessments, reporting & analytics	Small to medium Business	Cloud, SaaS, Web, Windows
A1 Tracker [51]	A1Enterprise	Highly-flexible and robust risk management system with web- based features for managing threat assessments and risk factors.		Cloud, SaaS, Web, Windows
IsoMetrix [52]	Metrix Software Solutions	managing business risk sustainability, and compliance	All	Cloud, SaaS, Web, Windows Mobile - Android
RiskGap [53]	IRMI	Enterprise Risk Management Online Tool	ALL	Cloud, SaaS, Web, Windows
iTrak [54]	IView System	Security, Surveillance and Risk Management	ALL	Cloud, SaaS, Web
STREAM [55]	Acuity Risk Management	integrated Enterprise Risk Management software solution	ALL	Cloud, SaaS, Web, Windows Mobile - Android
360factors [56]	360factors	cloud based Enterprise Risk and Compliance	ALL	Cloud, SaaS, Web

VIII. **Future**

In the future business and consumers may need fast speed and some changes in the basic architecture of computers technologies to transfer information fast and safe. Biometric technologies such as image processing and voice recognition will also be used. Voice recognition will be as an alternative to current input type with user voice to issue payments and others orders to financial service systems and also applications of image processing systems.

It is the duty of user organization to acquire application software. To use more than one process concurrently WINDOWING technologies are very helpful for the clients. These technologies permit the user to have a simultaneous view of data from many sources and help them to choose the items most useful to task at hand. A user may have one window to input order with broker and another to show cash flow and third ti view the status of transaction.

Another area of research is Knowledge-management belongs to Artificial intelligence will also getting famous in the financial industry. In financial organizations this Artificial intelligence will empower the decision making process by using computers. Researches in the area of expert systems show good results.

In the era of transactions intelligent machine leaning algorithms will be searched to get efficient results on time which will overcome frauds in online transactions especially in deep learning. Natural language processing will also be beneficial in business intelligence.

IT integration and lead-time reduction

This depicts that IT integration is more beneficial when it is used together with lead times as compared IT integration itself.

IX. Conclusions

The main cause to manage risk in a business is to secure the goals and assess of the business.

The aim of identifying risk is to help management in finding where to direct the assets. There are four major actions are adopted to complete this process, mitigation, transference, acceptance and avoidance. Information technology tools have an encouraging effect on risk management. So it is need to do more work on exact implementation of information technology in this area.

- 1. A great advancement is seen in HR function from previous age in training, hiring and consultation and other areas also.
- 2. The extent of HR functions is now broaden performing the activities of strategic business, transformation in the driving force, administration expert and representative of employee.
- 3. The responsibilities of HR teams are changed during 21st century. HR team now working as strategy maker, purposeful advisor, employee representative and human capital developer and also broad range of other responsibilities mentioned by Ultrich.
- 4. There are number of software which help HR team to make new policies and develop new methods for different area of business to ensure the quality of products and progress of organization.

References

- [1]. NTIS, "Effects of Information Technology on Financial Services Systems," The National Technical Information Service, order #PB85-152619, September 1984.
- [2]. M. R. A. & M. A. S. Fisher, "Rocket science retailing is almost here—Are you ready?," Harvard Business Review, 78(4), 115-124,
- P. V. M. &. R.-N. T. Rondeau, "Exploring work system practices for time-based manufacturers: Their impact on competitive [3].
- capabilities.," *Journal of Operations Management*, pp. 18(5), 509–529., 2000.

 A. solutions, "AccountMate," AccountMate software solutions, [Online]. Available: https://www.accountmate.com/. [Accessed 21] [4].
- C. A. Software, "CYMA," CYMA Payroll Software Solutions, [Online]. Available: https://cyma.com/. [Accessed 02 7 2021]. [5].
- A. a. F. M. Solutions, "Sageintacct," Sageintacct, [Online]. Available: https://www.sageintacct.com/products/accounting-software. [Accessed 2 7 2021].
- [7]. R. S. team, "Redwing," RedWing Software, [Online]. Available: https://www.redwingsoftware.com/home/home.aspx. [Accessed 5 7 20211.
- S. team, "SAP Accounting," [Online]. Available: https://www.sap.com/products/erp-financial-management/accounting-financial-[8]. close.html. [Accessed 5 7 2021].
- T. E. Team, "Traverse ERP," Traverse ERP Complete ERP Software and Business Management Software, [Online]. Available: [9]. https://www.osas.com/traverse. [Accessed 6 7 2021].
- Y. B. M. S. F. P. S. team, "Yendo," YENDO. BUSINESS MANAGEMENT SOFTWARE FOR PROFESSIONAL SERVICES., [Online]. Available: https://www.yendo.com/. [Accessed 02 5 2021].
- F. A. s. f. s. b. Team, "Freeagent Accounting software for small businesses," [Online]. Available: https://www.freeagent.com/en/. [11]. [Accessed 03 6 2021].
- N. Team, "Oracle NetSuite," [Online]. Available: https://www.netsuite.com/portal/home.shtml. [Accessed 8 6 2021].
- O. D. Community, "Oracle Cloud Infrastructure," [Online]. Available: https://www.oracle.com/index.html. [Accessed 10 5 2021]. [13].
- K. Team, "Kashoo Simple accounting apps," Kashoo, [Online]. Available: https://kashoo.com/. [Accessed 7 6 2021]. [14].
- Y. Long, " "The impact of information technology on the HR function transformation", Master Thesis, Business Administration [15]. HRM," University of Twente, 2009.

- [16]. D. V. K. JAIN, "Impact of Technology on HR Practices," INTERNATIONAL JOURNAL OF INFORMATIVE & FUTURISTIC RESEARCH, 2014.
- [17]. I. A. Alok Mishra, "Information Technology in Human Resource Management: An Empirical AssessmenT," Public Personnel Management, 2010.
- [18]. B. Team, "BambooHR," BambooHR Solutions, [Online]. Available: https://www.bamboohr.com/. [Accessed 8 6 2021].
- [19]. F. team, "Freshteam The smart HR software for growing businesses," Freshworks company, [Online]. Available: https://www.freshworks.com/hrms/.
- [20]. G. Team, "Gusto," Gusto company, [Online]. Available: https://gusto.com/. [Accessed 11 7 2021].
- [21]. T. Team, "Trakstar," Trakstar: Employee Performance Software, [Online]. Available: https://www.trakstar.com/. [Accessed 10 6 2021].
- [22]. Z. Team, "Crafted to build a happier workforce HR," Cloud based HRM Zoho, [Online]. Available: https://www.zoho.com/people/. [Accessed 8 6 2021].
- [23]. O. team, "OnPay: Online Payroll Services That Small Businesses Love," Onpay solutions, [Online]. Available: https://onpay.com/. [Accessed 11 6 2021].
- [24]. "Bizmerlin HR Solutions," Bizmerlin Media, [Online]. Available: https://www.bizmerlin.com/. [Accessed 12 6 2021].
- [25]. C. Team, "Clearcompany A Complete Talent Management System to Quickly Hire and Engage Top Talent," Clearcompany Solutions, [Online]. Available: https://www.clearcompany.com/. [Accessed 15 6 2021].
- [26]. i. Team, "iCIMS Talent," iCIMS Cloud Solutions, [Online]. Available: https://www.icims.com/talent-cloud-recruiting/. [Accessed 28 5 2021].
- [27]. M. A. V. T. R.-N. Patrick J Rondeau, "Exploring work system practices for time-based manufacturers: their impact on competitive capabilities," *Journal of Operations Management*, July 2000.
- W. a. Jones, "Barriers to Lean,," in Lean Thinking, 2000.
- [29]. M. Bruun, "Lean production and the Internet," *International Journal of Production Economics*, 2004.
- [30]. A. MCAFEE, "THE IMPACT OF ENTERPRISE INFORMATION TECHNOLOGY ADOPTION ON OPERATIONAL PERFORMANCE: AN EMPIRICAL INVESTIGATION," Production and Operations Management, 2009.
- [31]. C. S. M. C. F. Rosemary R. Fullerton, "An examination of the relationships between JIT and financial performance," *Journal of Operations Management*, 2003.
- [32]. T. W. S. a. J. D. Goldhar, "Advanced manufacturing and new directions for competitive strategy," *Journal of Business Research*, , 1995.
- [33]. F. Team, "Fishbowl," Fishbowl Manufacturing and Warehouse Inventory Management Software, [Online]. Available: https://www.fishbowlinventory.com/. [Accessed 14 6 2021].
- [34]. E. S. P. LTD, "Eci Shoptech," Shoptech Industrial Software Corporation, [Online]. Available: https://www.shoptech.com/. [Accessed 7 6 2021].
- [35]. G. S. S. Team, "Global Shop Solutions | ERP Software for Manufacturers," Global Shop Solutions, [Online]. Available: https://www.globalshopsolutions.com/. [Accessed 25 6 2021].
- [36]. E. s. s. Team, "M1 Manufacturing ERP Software," ECI software solutions, [Online]. Available: https://www.ecisolutions.com/manufacturers-and-job-shops/m1/. [Accessed 13 6 2021].
- [37]. I. V. Team, "Infor VISUAL | Order-Driven Manufacturing ERP Solutions," Infor VISUAL® lets manufacturers, [Online]. Available: https://www.infor.com/products/visual. [Accessed 27 5 2021].
- [38]. S. Holloway, "IQMS Software | Delmiaworks Manufacturing ERP Software," IQMS Software Company, [Online]. Available: https://www.iqms.com/. [Accessed 17 6 2021].
- [39]. J. S. M. S. Team, "JobBOSS Job Shop Management Software & Manufacturing," Jobboss software solution company, [Online]. Available: https://jobboss.com/. [Accessed 19 6 2021].
- [40]. V. E. Team, "Visual EstiTrackTM ERP Henning Software," Visual EstiTrack integrated ERP shop management system, [Online]. Available: https://www.henningsoftware.com/products/visual-estitrack/overview. [Accessed 21 6 2021].
- [41]. E. Rozenfeld, "Priority Software: ERP (Enterprise Resource Planning) Software," Priority Software: ERP (Enterprise Resource Planning) Software and Solutions, [Online]. Available: https://www.priorityerp.com/. [Accessed 24 6 2021].
- [42]. R. E. G. J. C. A. H. H.Carr, "Implementing information technology for competitive advantage: Risk management issues," Information and Management, 1994.
- [43]. T.VLoudon, "Geoscience after IT: Part A. Defining information technology, its significance in geoscience, and the aims of this publication," *Computers & Geosciences*, 2000.
- [44]. H. M. Assmuth Timo, "The significance of information frameworks in integrated risk assessment and management," *Environmental Science & Policy*, 2008.
- [45]. L. J. Paxton, "Faster, better, and cheaper" at NASA: Lessons learned in managing," Science direct, 2006.
- [46]. M. B. A. T. A. Dikmen a, "Learning from risks: A tool for post-project risk assessment," Automation in construction, 2008.
- [47]. S. A. O. S. Team, "Software Advice Optial SmartStart," Optial SmartStart Software, [Online]. Available: https://www.softwareadvice.com/risk-management/optial-smartstart-profile/. [Accessed 9 7 2021].
 [48]. S. L. R. M. S. S. Members, "SYNERGI LIFE RISK MANAGEMENT," SYNERGI LIFE RISK MANAGEMENT Software
- [48]. S. L. R. M. S. S. Members, "SYNERGI LIFE RISK MANAGEMENT," SYNERGI LIFE RISK MANAGEMENT Software Services, [Online]. Available: https://www.dnv.com/software/services/qhse/synergi-life-risk-management-index.html. [Accessed 14 6 2021].
- [49]. T. A. Solutions, "TeamMate," wolterskluwer, [Online]. Available: https://www.wolterskluwer.com/en/solutions/teammate.
- [50]. "Audits.io," Plan Brothers, [Online]. Available: https://www.planbrothers.io/products/audits. [Accessed 23 5 2021].
- [51]. A. Tracker, "Risk Management Software By AI Tracker," AI Tracker Software and Solutions, [Online]. Available: https://www.a1tracker.com/. [Accessed 19 7 2021].
- [52]. J. Castner, "IsoMetrix integrated risk management software," IsoMetrix Software Toronto, [Online]. Available: https://www.isometrix.com/. [Accessed 19 5 2021].
- [53]. I. Providers, "Risk Gap," IRMI Provides Insurance Analysis, Conferences, Continuing Education Courses, and Certifications, [Online]. Available: https://www.irmi.com/term/insurance-definitions/risk-gap. [Accessed 16 7 2021].
- [54]. i. developers, "IView Systems," iviewsystems, [Online]. Available: http://www.iviewsystems.com/. [Accessed 18 5 2021].
- [55]. R. M. T. M. A. F. Simon Marvell, "acuity Risk Management," Stream Platform, [Online]. Available: https://acuityrm.com/. [Accessed 26 7 2021].
- [56]. C. D. R. B. Carl McCauley, "360 Factors Software," 360 factors, [Online]. Available: https://www.360factors.com/. [Accessed 26 7 2021].