



## INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION AND MANAGEMENT

### CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	<b>ORGANIZATIONAL STORYTELLING: CONCEPTS, CHARACTERISTICS AND ADVANTAGES</b> <i>SKANDAR SHIRAZI, HAMIDEH SHEKARI &amp; SAID MEHDI VEYSEH</i>	1
2.	<b>EXAMINING THE EFFECT OF COMPANY'S SIZE AND RESOURCES ON THE RELATIONSHIP BETWEEN STAKEHOLDERS' PRESSURE AND ENVIRONMENTAL STRATEGIES IN THE MALYSIAN PALM OIL INDUSTRY</b> <i>MOHD RAFI YAACOB</i>	5
3.	<b>CORPORATE GOVERNANCE AND FINANCIAL REPORTING QUALITY: A STUDY OF NIGERIAN MONEY DEPOSIT BANKS</b> <i>SHEHU USMAN HASSAN</i>	12
4.	<b>AN EMPIRICAL STUDY ON TAX PAYER'S ATTITUDE TOWARDS E- RETURN FILING IN INDIA</b> <i>DR. SUJEET KUMAR SHARMA &amp; DR. RAJAN YADAV</i>	20
5.	<b>SPATIAL ANALYSIS OF LAND USE IN MYSORE CITY</b> <i>DR. HARISH. M</i>	25
6.	<b>DRIVERS OF NEW PRODUCT SUCCESS</b> <i>K. VIJAYAN &amp; DR. JAYSHREE SURESH</i>	30
7.	<b>KNOWLEDGE MANGEMENT FOR PERFORMANCE EXCELLENCE</b> <i>DR. S. RAMANATHAN &amp; DR. S. SELVAMUTHUKUMARAN</i>	35
8.	<b>A NEW PARADIGM IN DESIGNING AN ADVERTISEMENT - AN APPLICATION OF REAL TIME DATA WAREHOUSE &amp; DATA MINING IN PREPARATION OF AN AD COPY</b> <i>DR. G. VADIVALAGAN, N. SUGANTHI &amp; M. RAMESHKUMAR</i>	39
9.	<b>UNETHICAL PRACTICE OF MIS-SELLING OF INSURANCE – IMPACT AND SOLUTIONS</b> <i>C. BARATHI, DR. CH. IBOHAL MEITEI &amp; C. D. BALAJI</i>	45
10.	<b>BUSINESS PROCESS DEVELOPMENT IN SERVICE ORIENTED ARCHITECTURE</b> <i>C. K. GOMATHY &amp; DR. S. RAJALAKSHMI</i>	50
11.	<b>VARIANCE OF THE TIME TO RECRUITMENT IN A SINGLE GRADED MANPOWER SYSTEM – SCBZ PROPERTY</b> <i>R. ARUMUGAM &amp; DR. A. PANDURANGAN</i>	54
12.	<b>SURVEY - 3D FACE TRACKING</b> <i>SUSHMA JAISWAL, DR. SARITA SINGH BHADAURIA &amp; DR. RAKESH SINGH JADON</i>	57
13.	<b>AN EMPIRICAL EVALUATION OF INVESTORS INCLINATION ON ULIP INSURANCE PRODUCTS WITH REFERENCE TO DELHI CITY</b> <i>R. SERANMADEVI, DR. M. G. SARAVANARAJ &amp; DR. M. LATHA NATARAJAN</i>	79
14.	<b>A STUDY ON THE TRAFFIC PROBLEMS WITH SPECIAL REFERENCE TO NELLORE DISTRICT</b> <i>KANAGALURU SAI KUMAR</i>	84
15.	<b>A STUDY ON LEAN MANAGEMENT IN CHENNAI PORT</b> <i>R. AKILA &amp; DR. N. THANGAVEL</i>	89
16.	<b>CONSUMER PREFERENCE FOR COSMETICS AMONG COLLEGE GIRLS IN TIRUNELVELI AND THOOTHUKUDI DISTRICTS</b> <i>P. DEVIBALA &amp; DR. A. RANGASWAMY</i>	94
17.	<b>MANAGING NON PERFORMING ASSETS: A STUDY OF INDIAN COMMERCIAL BANKS</b> <i>DR. HIMANSHU SHEKHAR SINGH &amp; DR. AJAY SINGH</i>	99
18.	<b>EMPOWERMENT OF RURAL ODISHA THROUGH CONNECTIVITY (WITH SPECIAL REFERENCE TO KHURDA DISTRICT OF ODISHA)</b> <i>DR. IPSEETA SATPATHY, DR. B. CHANDRA MOHAN PATNAIK &amp; PRABIR KUMAR PRADHAN</i>	103
19.	<b>CHOICE OF CAPITAL STRUCTURE MODEL: AN EMPIRICAL ANALYSIS WITH REFERENCE TO STATIC TRADE-OFF VS PECKING ORDER THEORIES IN BEVERAGE AND ALCOHOL INDUSTRY IN INDIA</b> <i>RAJU DEEPA &amp; DR. RAMACHANDRAN AZHAGAIAH</i>	107
20.	<b>EFFECTIVE MARKETING STRATEGY FOR SMALL SCALE PLASTIC PROCESSING UNITS IN M. I. D. C., JALGAON</b> <i>PRASHANT S. WARKE</i>	112
21.	<b>BUSINESS OPPORTUNITIES AND TRENDS IN INDIA - 'SILVER MARKET AND YOUTH PREMIUM MARKET'</b> <i>DR. M. A. LAHORI</i>	117
22.	<b>JIT BASED QUALITY MANAGEMENT IN INDIAN INDUSTRIES</b> <i>SANDEEP MALIK, NISHANT PAHWA &amp; DR. DINESH KHANDUJA</i>	120
23.	<b>RECENT CASE STUDIES OF RISK IN INFORMATION SECURITY</b> <i>DR. S. KANCHANA RATNAM &amp; T. T. RAJKUMAR</i>	123
24.	<b>RELATIONSHIP BETWEEN JOB STRESS AND EMPLOYEES PERFORMANCE IN DAY TO DAY OPERATIONS OF PRIVATE ORGANIZATIONS AND THE IMPACT OF STRESS ON THE OVERALL PERFORMANCE OF EMPLOYEE</b> <i>VIJAY KUMAR GUPTA</i>	126
25.	<b>CONSUMER AWARENESS TOWARDS MOBILE - BANKING AMONG WORKING PROFESSIONALS</b> <i>RAJAN GIRDHAR &amp; NIDHI BHARDWAJ</i>	134
	<b>REQUEST FOR FEEDBACK</b>	140

A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories Indexed & Listed at: [Ulrich's Periodicals Directory ©, ProQuest, U.S.A.](#), [Open J-Gate, India](#) as well as in [Cabell's Directories of Publishing Opportunities, U.S.A.](#) Circulated all over the world & Google has verified that scholars of more than eighty-one countries/territories are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

[www.ijrcm.org.in](http://www.ijrcm.org.in)

## CHIEF PATRON

**PROF. K. K. AGGARWAL**

Chancellor, Lingaya's University, Delhi  
Founder Vice-Chancellor, Guru Gobind Singh Indraprastha University, Delhi  
Ex. Pro Vice-Chancellor, Guru Jambheshwar University, Hisar

## PATRON

**SH. RAM BHAJAN AGGARWAL**

Ex. State Minister for Home & Tourism, Government of Haryana  
Vice-President, Dadri Education Society, Charkhi Dadri  
President, Chinar Syntex Ltd. (Textile Mills), Bhiwani

## CO-ORDINATOR

**MOHITA**

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadhola, Yamunanagar

## ADVISORS

**PROF. M. S. SENAM RAJU**

Director A. C. D., School of Management Studies, I.G.N.O.U., New Delhi

**PROF. S. L. MAHANDRU**

Principal (Retd.), Maharaja Agrasen College, Jagadhri

## EDITOR

**PROF. R. K. SHARMA**

Dean (Academics), Tecnia Institute of Advanced Studies, Delhi

## CO-EDITOR

**MOHITA**

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadhola, Yamunanagar

## EDITORIAL ADVISORY BOARD

**DR. AMBIKA ZUTSHI**

Faculty, School of Management & Marketing, Deakin University, Australia

**DR. VIVEK NATRAJAN**

Faculty, Lomar University, U.S.A.

**DR. RAJESH MODI**

Faculty, Yanbu Industrial College, Kingdom of Saudi Arabia

**PROF. PARVEEN KUMAR**

Director, M.C.A., Meerut Institute of Engineering & Technology, Meerut, U. P.

**PROF. H. R. SHARMA**

Director, Chhatrapati Shivaji Institute of Technology, Durg, C.G.

**PROF. MANOHAR LAL**

Director & Chairman, School of Information & Computer Sciences, I.G.N.O.U., New Delhi

**PROF. ANIL K. SAINI**

Chairperson (CRC), Guru Gobind Singh I. P. University, Delhi

**PROF. R. K. CHOUDHARY**

Director, Asia Pacific Institute of Information Technology, Panipat

**DR. ASHWANI KUSH**

Head, Computer Science, University College, Kurukshetra University, Kurukshetra

**DR. BHARAT BHUSHAN**

Head, Department of Computer Science & Applications, Guru Nanak Khalsa College, Yamunanagar

**DR. VIJAYPAL SINGH DHAKA**

Head, Department of Computer Applications, Institute of Management Studies, Noida, U.P.

**DR. SAMBHAVNA**

Faculty, I.I.T.M., Delhi

**DR. MOHINDER CHAND**

Associate Professor, Kurukshetra University, Kurukshetra

**DR. MOHENDER KUMAR GUPTA**

Associate Professor, P. J. L. N. Government College, Faridabad

**DR. SAMBHAV GARG**

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana

**DR. SHIVAKUMAR DEENE**

Asst. Professor, Government F. G. College Chitgappa, Bidar, Karnataka

**DR. BHAVET**

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana

***ASSOCIATE EDITORS***

**PROF. ABHAY BANSAL**

Head, Department of Information Technology, Amity School of Engineering & Technology, Amity University, Noida

**PROF. NAWAB ALI KHAN**

Department of Commerce, Aligarh Muslim University, Aligarh, U.P.

**DR. ASHOK KUMAR**

Head, Department of Electronics, D. A. V. College (Lahore), Ambala City

**ASHISH CHOPRA**

Sr. Lecturer, Doon Valley Institute of Engineering & Technology, Karnal

**SAKET BHARDWAJ**

Lecturer, Haryana Engineering College, Jagadhri

***TECHNICAL ADVISORS***

**AMITA**

Faculty, E.C.C., Safidon, Jind

**MOHITA**

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadholi, Yamunanagar

***FINANCIAL ADVISORS***

**DICKIN GOYAL**

Advocate & Tax Adviser, Panchkula

**NEENA**

Investment Consultant, Chambaghat, Solan, Himachal Pradesh

***LEGAL ADVISORS***

**JITENDER S. CHAHAL**

Advocate, Punjab & Haryana High Court, Chandigarh U.T.

**CHANDER BHUSHAN SHARMA**

Advocate & Consultant, District Courts, Yamunanagar at Jagadhri

***SUPERINTENDENT***

**SURENDER KUMAR POONIA**

## CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the area of Computer, Business, Finance, Marketing, Human Resource Management, General Management, Banking, Insurance, Corporate Governance and emerging paradigms in allied subjects like Accounting Education; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Monetary Policy; Portfolio & Security Analysis; Public Policy Economics; Real Estate; Regional Economics; Tax Accounting; Advertising & Promotion Management; Business Education; Business Information Systems (MIS); Business Law, Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labor Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; Public Administration; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism, Hospitality & Leisure; Transportation/Physical Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Digital Logic; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Multimedia; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic; Web Design. The above mentioned tracks are only indicative, and not exhaustive.

Anybody can submit the soft copy of his/her manuscript **anytime** in M.S. Word format after preparing the same as per our submission guidelines duly available on our website under the heading guidelines for submission, at the email addresses, [infoijrcm@gmail.com](mailto:infoijrcm@gmail.com) or [info@ijrcm.org.in](mailto:info@ijrcm.org.in).

## GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1. **COVERING LETTER FOR SUBMISSION:**

DATED: \_\_\_\_\_

**THE EDITOR**

IJRCM

**Subject:** SUBMISSION OF MANUSCRIPT IN THE AREA OF \_\_\_\_\_.

(e.g. Computer/IT/Finance/Marketing/HRM/General Management/other, please specify).

**DEAR SIR/MADAM**

Please find my submission of manuscript titled ' \_\_\_\_\_ ' for possible publication in your journal.

I hereby affirm that the contents of this manuscript are original. Furthermore it has neither been published elsewhere in any language fully or partly, nor is it under review for publication anywhere.

I affirm that all author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

Also, if our/my manuscript is accepted, I/We agree to comply with the formalities as given on the website of journal & you are free to publish our contribution to any of your journals.

**NAME OF CORRESPONDING AUTHOR:**

Designation:

Affiliation with full address & Pin Code:

Residential address with Pin Code:

Mobile Number (s):

Landline Number (s):

E-mail Address:

Alternate E-mail Address:

2. **INTRODUCTION:** Manuscript must be in British English prepared on a standard A4 size paper setting. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of the every page.
3. **MANUSCRIPT TITLE:** The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.
4. **AUTHOR NAME(S) & AFFILIATIONS:** The author (s) full name, designation, affiliation (s), address, mobile/landline numbers, and email/alternate email address should be in italic & 11-point Calibri Font. It must be centered underneath the title.
5. **ABSTRACT:** Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para.
6. **KEYWORDS:** Abstract must be followed by list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.
7. **HEADINGS:** All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.
8. **SUB-HEADINGS:** All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.
9. **MAIN TEXT:** The main text should be in a 8 point Calibri Font, single spaced and justified.
10. **FIGURES & TABLES:** These should be simple, centered, separately numbered & self explained, and titles must be above the tables/figures. Sources of data should be mentioned below the table/figure. It should be ensured that the tables/figures are referred to from the main text.
11. **EQUATIONS:** These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.
12. **REFERENCES:** The list of all references should be alphabetically arranged. It must be single spaced, and at the end of the manuscript. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per following:
  - All works cited in the text (including sources for tables and figures) should be listed alphabetically.
  - Use **(ed.)** for one editor, and **(ed.s)** for multiple editors.
  - When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
  - Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
  - The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
  - For titles in a language other than English, provide an English translation in parentheses.
  - The location of endnotes within the text should be indicated by superscript numbers.

**PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:**

**BOOKS**

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio," Ohio State University.

**CONTRIBUTIONS TO BOOKS**

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

**JOURNAL AND OTHER ARTICLES**

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

**CONFERENCE PAPERS**

- Garg Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–22 June.

**UNPUBLISHED DISSERTATIONS AND THESES**

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

**ONLINE RESOURCES**

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

**WEBSITE**

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Economic and Political Weekly, Viewed on July 05, 2011 <http://epw.in/user/viewabstract.jsp>



## BUSINESS PROCESS DEVELOPMENT IN SERVICE ORIENTED ARCHITECTURE

**C. K. GOMATHY**

**RESEARCH SCHOLAR**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING,**

**SRI CHANDRASEKHARENDRA SARASWATHI VISWA MAHA VIDYALAYA (UNIVERSITY)**

**ENATHUR, KANCHIPURAM**

**DR. S. RAJALAKSHMI**

**PROFESSOR AND HEAD**

**DEPARTMENT OF CSE**

**SRI CHANDRASEKHARENDRA SARASWATHI VISWA MAHA VIDYALAYA (UNIVERSITY)**

**ENATHUR, KANCHIPURAM**

### ABSTRACT

*The Study explores and proposes a new concept in developing outline and assesses strategic business and technology aspects of cloud computing. Theoretical background and overview is presented on the basic underlying principles, autonomic and utility computing, Service oriented Architecture. Service-oriented architecture (SOA) paradigm for Orchestrating large-scale distributed applications offers significant cost savings by reusing existing services. However, the high irregularity of client requests and the distributed nature of the approach may deteriorate service response time and availability. Static replication of components in data centres for accommodating load spikes requires proper resource planning and underutilizes the cloud infrastructure. Their relation to cloud computing is explored and a case for scaling out vs. scaling up is made and scaling out of relational databases in traditional application is stressed a bottleneck. The rapid progress in information technology and availability of services at low cost has broadened the use of internet for multiple applications. By evaluating strategic issues and weighting in business adoption pros and cons. Cloud computing is expected to be an economically visible alternative to conventional methodology for implementation of projects without compromising the quality of services. I specifically point out cost efficiency, vendor lock in effects leading to operational risks to be prevailing for the majority of larger business customers that could potentially mandate their IT and computing needs from the cloud. Leading current cloud architectures are compared in software industry. I explore that the process of cloud business deployment will be gradual, but also that government regulations and legal aspects are also likely to business development process further. Ultimately, I conclude with an outlook and recommendations for companies and cloud providers.*

### KEYWORDS

cloud architectures, cloud computing adoption, autonomic computing, Business Process Management System, and Service Oriented Architecture.

### INTRODUCTION AND MOTIVATION

Cloud computing is a very current topic and the term has gained a lot of traction being sported on advertisements all over the Internet from web space hosting providers, through data Centers to virtualization software providers. Cutting through the hype of cloud computing is not an easy task as a simple web search suffices to convince that there are nearly as many definitions on what constitutes 'cloud computing' as there are players in the market seeking to gain new territory in that promising new business field. Cloud computing is an emerging technology which play a vital role in effective implementation of a lower cost. Today's dynamic environment of changing needs require on demand location independent computing services which include software, platform and scalable infrastructure. The cloud computing can provide such an environment for optimum utilization of resources. They either provide cloud computing commercial Solutions in one form or another, or actively sponsor research centres, Pursuing development of marketable technology. cloud computing aim at and what are typical services that are expected to be encompassed by the definition of cloud computing, as evidenced for instance by the work of the "new offerings that allow enterprises to benefit from the developments taking place in the area of Cloud Computing" yet they attempt to steer clear out of the hype and highlight that they have redefined cloud computing to include everything sharing among different platform. Cloud computing technology from industry optimism to critique on the viability and feasibility along with concerns on privacy, security and not least cost efficiency of the currently offered cloud computing models is available as and seems to be broadly discussed within the IT community.

The main goal is to "clear the air on cloud computing" and provide an unbiased and independent, albeit critical outlook of the technology. As the title of this thesis suggests its aim is to enable the reader to gain an overview of the vital aspects of cloud computing in a three-fold way: by a) providing common definitions of the important terms; b) by setting apart the advantages of the technology and the disadvantages and problems inherent to it; and c) by ultimately delivering concrete technical and business model details on popular cloud architectures, offered by the big players in the field. Special emphasis is put on the critical examination of each strategy as now more than ever in the face of the global economic crisis, companies face higher refinancing and investment costs and as any company thinking about Adopting or moving to cloud computing technology would do in practice, short-to-medium term disadvantages of the technology have to be pragmatically and carefully weighted out against any hyped long-term potential efficiency achievements, be it strategic, technical or cost related.

### AUTONOMIC AND UTILITY COMPUTING

In order to understand the vision, goals and strategy behind cloud computing, two key concepts that form its foundations need to be explained first. What seem to be the promising advantages of autonomic computing – systems that manage themselves, coupled with the flexibility and freedom of utility computing mark the core values of the business proposition offered by what is referred to as 'cloud computing'. There primary target is by developing 'autonomic elements' to combat the ever growing complexity of integrating and interconnecting the myriad diverse software systems that still continue to emerge exponentially throughout all areas of IT. A parallel could be drawn from these four characteristics to the desired characteristics one would want (or expect) systems deployed 'in the cloud' to possess:

- **Self-management** – automatic configuration of components according to high-level policies. This would assure seamless adjustment of the rest of the system
- **Self-optimization** – components strive proactively to optimize their own performance. That would accounts for a continuously improving efficiency of the whole system in general
- **Self-healing** – the system in general diagnoses and removes software (IBM cited even hardware) issues. Thereby the system should ideally self-repair and self-maintain to the extent possible
- **Self-protection** – the system defends itself from malicious attacks and cascading failures. Software organizations 'early warning' mechanism to prevent systemic failures.

According to software industry even though their own claims for such a high degree of automation might seem like science fiction, increasingly autonomic systems in their vision would not spawn out of nowhere, but rather gradually as engineers add more and more sophisticated autonomic managers to existing humanly managed elements. However, software industry states in addition two necessary attributes to autonomic computing, that taken in the context of cloud computing seem to be problematic and relevant right now, long before the significant engineering challenges towards developing all the fancy autonomic systems are overcome. These purely organizational challenges are:

- **Privacy policies and laws** – autonomic systems must appropriately segregate and protect private data (not even remotely mentioned how)
- **Open standards** – the system must rely on such, also including its communication protocols; it cannot and shall not exist in a proprietary world. Additional arguments are provided further on in this thesis that emerging cloud computing providers almost naturally expect to perform a 'vendor lock' into their proprietary world on their clients, which reflects both the customer as well as the cloud computing industry negatively.

## CLOUD COMPUTING

Cloud computing is a model generally defined as the clusters of scalable and virtualized resources like distributed computers, storage, and system software etc. which makes use of internet to provide on demand services to the user. The opinions differ, but a pattern is found such that the wording in almost all explanations hovers around the keywords scalability, on-demand, pay-as-you-go, self-configuration, self maintenance and Software as a Service. A technical stance and considers a 'cloud' to be a pool of virtualized resources that hosts a variety of workloads, allows for a quick scale-out and deployment, provision of virtual machines to physical machines, supports redundancy and self-recovery and could also be monitored and rebalanced in real time.

*"A Cloud is a type of parallel and distributed system consisting of a collection of interconnected and virtualized computers that are dynamically provisioned and presented as one or more unified computing resources based on service-level agreements established through negotiation between the service provider and consumers."*

It emphasize that a 'cloud' is thereby not only a combination of clusters and grids, but is also extended by the implied usage of virtualization technologies such as Virtual Machines (VMs) to meet a specifically *negotiated* service quality level. This definition implies and captures two potentially problematic issues of a) the business issue of negotiating *the proper* SLA from the customer's perspective and b) of having the technical capacity to correctly account for and guarantee the service outlined in that SLA at all resource monitoring, failure redundancy, rebalancing of workloads, etc. from the provider's perspective

*"Cloud Computing refers to both the applications delivered as services over the Internet and the hardware and systems software in the datacenters that provide those services (Software as a Service - SaaS). The datacenter hardware and software is what we will call a Cloud. When a Cloud is made available in a pay-as-you-go manner to the public, we call it a Public Cloud; the service being sold is utility Computing."*

The could also be seen as recursive in case of mash-up provider that is a cloud user of another platform at the same time:

## CLOUD PROVIDER SAAS PROVIDER / → CLOUD USER → SAAS USER

It is specifically of the usage of the terminology Infrastructure/Hardware as a Service and Platform as a Service, which is commonly found in cloud computing explanations by industry experts and academics – rather Utility Computing (used here again interchangeably with Cloud Computing) is classified in three models – Computation, Storage and Networking. The following building blocks of cloud computing:

- Storage-as-a-Service
- Database-as-a-Service
- Information-as-a-Service
- Process-as-a-Service
- Application-as-a-Service
- Software-as-a-Service
- On-demand self-Service
- Infrastructure-as-a-Service
- Platform-as-a-Service
- Integration-as-a-Service
- Security-as-a-Service
- Management/Governance-as-a-Service
- Testing-as-a-Service
- Measured-as-a-Service

## SERVICE ORIENTED ARCHITECTURE

Service-oriented Architecture refers to a modular design principle in software architecture. Service-orientation aims at separating individual functions into distinct units or "services", that could be accessed, e.g. via a network, by developers to integrate them in a reusable manner in their applications. A Paramount is the loose coupling of those services to programming languages and specific underlying platforms, i.e. the services communicate with the applications (or other services) that invokes them via their predefined interfaces. Ideally, those should be standard, available, documented and easily implementable. It suggests the following guiding principles towards designing a service – it should be granular, componentized, encapsulated, eave raging existing modules, having life cycle management and complying to common industry and IT standards. Ultimately, SOA based applications should leverage a multitude of already developed services – purposefully designed, stateless pieces of business logic that compute specific tasks and deliver clear and usable results in return. XML/SOAP protocols are examples of commonly used for building SOA applications and utilizing web services (services accessible via HTTP protocols). From the business perspective SOA should allow for reuse of existing investments through leverage of already bought technology, evidenced e.g. as plenty of companies are creating services extracted from existing applications to be mandated for further standardized usage company wide in the enterprise SOA. Moreover, by deploying a flexible SOA in the enterprise, existing systems could be changed more flexibly to accommodate for changing business and user needs. SOA, as an architecture design principle is a necessary ingredient towards enabling any of the cloud computing models and paradigms mentioned in this thesis for two key reasons:

- **Firstly**, the term Service-oriented Infrastructure (SOI), as defined by software organizations to be the "virtualized IT infrastructure in an industrialized way" manages a multitude of services as well as SOA applications. Intel reaches to draw a parallel with autonomic computing and further enhance the understanding of these "SOA layer" with a couple of very high-level tasks such as management of virtualization, load balancing and capacity planning, monitoring and problem diagnosis, security enforcement and utilization metering (incl. SLA compliance). If and when, theoretically, systems (including those of normal, non-IT enterprises) are made to be capable of such seamless encapsulation, abstraction and management of whole computing resources, moving, providing or acquiring them from the Cloud would be the next logical thing to do. However, for the time being this as well as most of software industry vision of autonomic computing remains largely wishful thinking, yet still points towards the general trend in automating enterprise IT resources.

- **Secondly**, any software or software platform that is to be 'offered as a service' or "provided in a pay-as-you-go manner" should be designed along SOA principles. Customers, or software application developers would thereby theoretically design their systems to be modular or use other's modules and ideally pay only for the components they need (if they are drawing on external pieces of code). Although apparently not a new concept at all, I would argue that the trend towards cloud computing and the resulting need for more interoperable systems (as they are hosted/executed in the cloud) would naturally strengthen the case for SOA based software. According to some experts, SOA is already anchored to a point that in ten years from now there will be no market segment for SOA software, "as this would be the way things are done".

## BUSINESS ACCESS FROM ANYWHERE

Cloud computing is a network based service. This makes accessibility to the cloud services location independent. The only prerequisite is the use of standard internet-enabled devices like low cost desktop computers, mobile handsets etc at client side with high speed network. Business access is a fast reaction to change and the ability to rapidly implement changes. Business agility needs to be holistic in scope. Business agility consists of three interoperable components: Human, Business Process, and Technical agility. Humans are assumed to be agile in management and operations for the enterprise to be agile. Human agility is the main enabler of business agility. Business process agility has gone long road till it reached Business Process Management System (BPMS). Technical agility, that addresses IT infrastructure and information systems architecture, can make use of SOA. Aligning BPMS and SOA can enhance business agility.

## BUSINESS PROCESS MANAGEMENT: POTENTIAL BUSINESS ADVANTAGES VS. SETBACKS IN REALITY

Cloud computing, is a pragmatically and independent point of view. Advantages and pros spread faster as the technology gains traction – prominent examples are outlined in the introductory section. The goal is however to critically set apart the following, more unpopular key aspects:

- Marketing claims for future potentials vs. current technical capabilities
- Business models for which cloud computing makes sense vs. those for which it does not – arguably, the majority of IT spending
- Different types of vendor lock-in effects – explained and weighted
- Security issues to which more concern should be paid

Business Process Management (BPM) is the key to business agility. Business process is a Series of inter-related activities that cross functional enterprise boundaries with individual inputs and outputs. Business processes are either operational or supporting. Operational Business processes are associated with the way enterprise develop strategies, invent, market and sell products or services. Support processes include the provision of Human Resource Management (HRM) activities, information systems infrastructure, and finance and asset Management.

The Cloud computing implies, the effectiveness of resource usage and scalability of grid computing. Grid computing architectures are not easy to set up as they imply complexities of all sorts – middleware and network configurations among others. However, as grids are 'taken to the next level', here are some of the often quotes pros from the business perspective of companies to move to cloud computing.

- **Countering of standardized resources usage** based on actual consumption – utility computing and pay-as-you-go models are introduced to charge the customer for hardware usage, be it server- RAM-hours, gigabyte-storage-hours, CPU-hours, etc. Thus, in addition to the currently spread standardized-server-configuration-hours (for renting a dedicated server from a datacenter) and network bandwidth usage (GB of data transferred), more flexibility is introduced as resources are relinquished after no longer being needed
  - **Elasticity** – scalability and load-balancing of the server resources are built-in. There by short-term automatic provision, enabling invocation of additional resources is paramount. The benefits of this could be enormous to companies that experience frequent and significant Changes in computing or storage needs. *Service unavailability* and therefore lost-customer-costs are avoided as all potential computing needs/server requests are possible to be met. A classic example may include social networks that receive a sudden surge in popularity (“victim of own success”), a web shop during peak pre-holiday times, but also a news or company website (e.g. an airline) that, due to critical events receives an overwhelming amount of traffic that requires more than the planned/available computing resources, in order for all of the requests to be served
  - **No capital expenditure** on hardware (as well as software) that performs the computing needs. These are the fixed costs associated with one time purchases of IT infrastructure that are amortized over time. They are converted to operating expenses for renting the resources of the cloud provider.
  - **Uncomplicated deployment** as well as availability of autonomic management features that lead to easier and less costly maintenance, i.e. less personnel costs of the cloud provider for managing a given pool of server resources (e.g. administrators per 1000 servers), thus the ability to offer the resources at lower prices.
- All of the above listed lead to *faster time-to-market* as well as *lower specific project costs* related to the implementation of a given software solution in a cloud rather than a traditional internal IT department or datacenter. However, as argued further on in this chapter, those benefits are easily pinpointed if one were to “create the next Face book” or “the next YouTube”, but largely questionable if one were to move their on-premises or own datacenter existing computing resources to the cloud.

## TECHNICAL MIGRATION TO NEW TECHNOLOGY

In a dynamic environment, the government policies of various ministries change from time to time requiring appropriate changes in e-government applications. Sometimes it may require migration to new technology in the distributed setup, migration is a challenging task which requires implementation at site, often at multiple locations. Comparetively, migration to new technology is relatively easier and faster in case of cloud based architecture because changes at one location alone ensure migration to new application by its users.

Technical agility refers to the ability to quickly change the type and flow of information within an organization within enterprise. Technical agility parameters are IT infrastructure, and information system architecture. IT advance has not yet satisfied business requirements due to improper information systems architectures. SOA addresses technical agility requirements by presenting compos ability, modularity, and loose coupling concepts as services that wrap underlying IT infrastructure, databases, and legacy systems and present them via standard interface. There is a need to stabilize IT infrastructure rather than developing new ones and SOA enables this stabilization. Enterprises should balance IT to become better positioned and more agile. Services is the building Blocks of an agile enterprise Service as ‘A Component capable of performing a task’. Service is ‘A vehicle by which a consumer’s need or want is satisfied according to a negotiated contract (implied or explicit) which includes Service Agreement, Function Offered and so on’

## PRIVACY AND SECURITY ISSUES

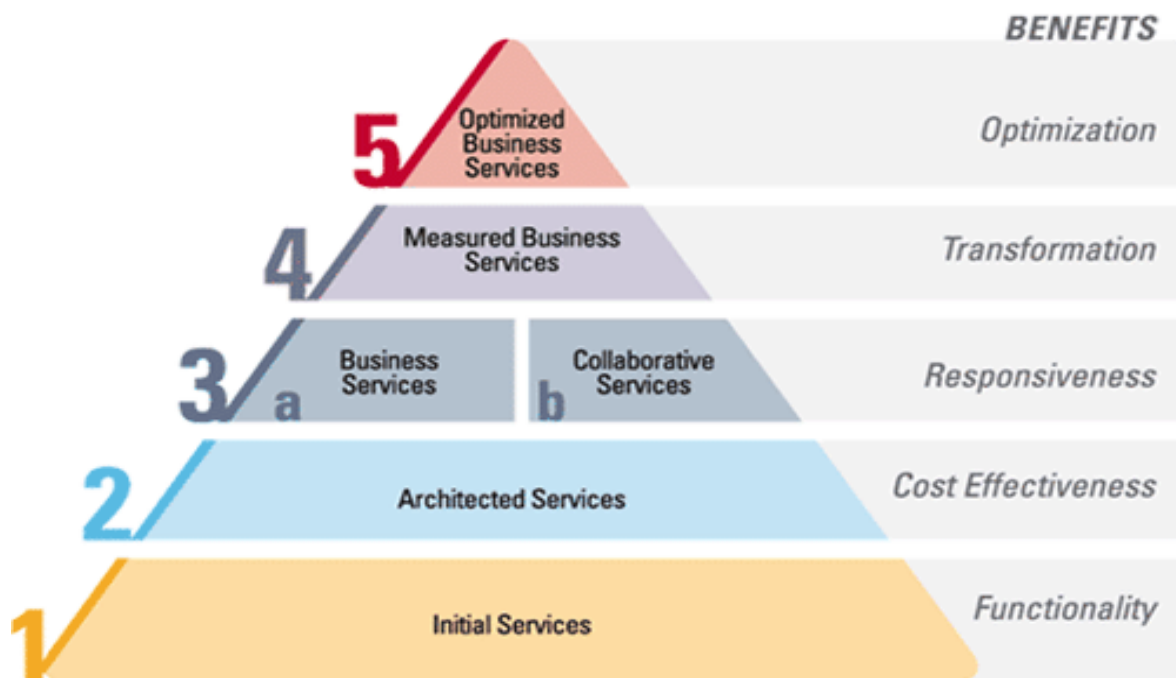
Shared infrastructure scares many enterprise customers. Placing enterprise data in a public cloud is a serious concern and companies wary about their sensitive data logically question the ability of public cloud computing providers to provide the same level of security as their own datacenters. Depending on the type of cloud computing used and the level of abstraction (OS-level vs. platform vs. application level) different security issues arise in public clouds. The cloud provider is responsible for the physical security of the machines, for ensuring that virtual machine instances are running isolated from one another (i.e. crashes and software exploits of one system do not affect the others) as well as for setting up firewalls to protect the Virtual Machines from the network. However, higher level cloud services such as Google App Engine and platforms like Azure are also responsible for their application-level security and clients have less control controlling it. In addition, downtimes, outright data losses in storage services and risks of cloud provider malfeasance are further threats to be weighted when a company considers public cloud services usage.

Data Security – Confidentiality and Availability: Virtual Machines have shown vulnerabilities to certain kinds of memory attacks. Even though physical access to the PC running the Virtual Machines is a prerequisite, I argue that private clouds are generally more secure, as availability of the physical machines and full administrative rights are at the company's disposal. Arguably, it is much more likely that in case a bug is found (or proactively with malicious attacks) problems arise that allow Virtual Machines users to access other users' Virtual Machines instances or storage data. Naturally, such problems exist in large datacenters too, yet the implications of ultra large scale failures given hundreds of thousands of potential cloud users sharing the same infrastructure could be devastating. Debugging such distributed such developed; widely distributed systems may later be very difficult, as some errors could not be reproduced in smaller, test configurations. Companies should spend additionally to ensure that their data and applications are as secure as possible in the cloud. Encrypted all data sent to the cloud may be an option to ensure security, yet this may have implications on costs for developing/configuring applications appropriately.



## THE FIVE PILLAR MODEL OF SOA COMMITMENT

FIG. 1: FIVE PILLAR MODEL OF SOA COMMITMENT



SOA Commitment as encapsulating by giving all functionality at work. This commitment entails things as using time constructively, attention to detail, cost effectiveness, responsiveness, transformation, making that collaborative effort, accepting change, co-operation with others business development. In this paper, we propose a cost-efficient approach for dynamic and geographically-diverse replication of components in a cloud computing infrastructure that effectively adapts to load variations and offers service availability guarantees. In our virtual economy, components rent server resources and replicate, migrate or delete themselves according to self optimizing strategies. We experimentally prove that such an approach outperforms in response time even full replication of the components in all servers, while offering service availability guarantees in optimization techniques.

## CONCLUSION

Cloud computing is undoubtedly still work in progress – both from a technical and business perspective. Although projects attempt to bring about a platform that is provider-independent, the lack of open standards and the abundance of proprietary APIs that each provider actively tries to bestow upon its users is still a major setback to wider scale adoption in my opinion. Clearly put, my conclusion is that non-IT industry businesses' IT departments are not yet justified to be moved to cloud architectures, and if so only for very specific business tasks and with great caution. Yet, execution of batch jobs/parallel processing tasks and smaller online businesses running only pure web applications seem to be a nice fit, regardless of being locked in with a specific cloud provider. Listed below are my concluding thoughts, listed arbitrarily that also relate to certain vendors and technologies:

- Google App Engine is likely to serve as a showcase for cloud computing. Companies may realize the advantages of scaling their web applications as they look up to Google as a technology leader and try to see how they can benefit from that using other ways. App Engine in its current form is not likely to be something other than a niche in that sense.
  - On the hardware side, cloud based memory architectures are likely to grow in popularity and be offered by providers to instances as an additional premium perk. Twitter.com reportedly stores much of its data in RAM instead on hard disks and is thus able to restart in to minutes.
  - The global financial crisis is likely to affect decisions for cloud technology and contrary to popular belief, not in a good way, at least in short-to-medium term. Companies will not massively invest in uncertain technologies no matter how promising they are, even though the. This is no ordinary crisis and as with cloud computing risk aversion could be amplified more than potential savings, and rightly so
- Ultimately, legal and regulatory issues are likely to be a decisive factor. If and when major cloud computing adoption takes place, governments will need to step in and regulate in one form or another either the service providers or the cloud users or both and rightly so.

## REFERENCES

1. John Viega, "Cloud Computing and the common man", IEEE computer, PP 106-108, August 2009.
2. M. MAY, "Business Process Management: Integration in a Web-enabled environment", Prentice Hall, 2003.
3. Kephart J.Chess, David M "The Vision of Autonomic Computing", published by the IEEE computer Society, Jan 2003.
4. G. V. de Putte, T. Benedetti, D. Gagic, P. Gersak, K. Kreutzer, M. Perry, "Intra-Enterprise Business Process Management", IBM Redbooks, 2001.
5. R. Baskerville, "Business Agility and Information Technology Diffusion", Springer, 2005.
6. J. Hurwitz, R. Bloor, C. Baroudi, M. Kaufman, "Service Oriented Architecture For Dummies", Wiley, 2007.
7. R. T. Fielding, "Architectural Styles and the Design of Network-based Software Architectures", University of California, 2001.
8. R. Vokurka, and G. Fliedner, "The journey toward agility", MCB UP Ltd, 1998.
9. R. Foster, and S. Kaplan, "Creative Destruction: Why Companies That Are Built to Last Underperform the Market – and How to Successfully Transform Them", McKinsey, 2001.
10. H.Gilbert Milter and john veiga "cloud computing will commodity services benefit users long term", IEEE IT professional, pp57-59, November/December 2009.

## **REQUEST FOR FEEDBACK**

**Dear Readers**

At the very outset, International Journal of Research in Computer Application and Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mails i.e. **infoijrcm@gmail.com** or **info@ijrcm.org.in** for further improvements in the interest of research.

If you have any queries please feel free to contact us on our E-mail **infoijrcm@gmail.com**.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

**Academically yours**

Sd/-

**Co-ordinator**