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Original Research Article

A FRAMEWORK FOR DEVELOPING SERVICE-ORIENTED ARCHITECTURE FOR MOBILE COMMUTING-AN EXPLORATORY STUDY OF SCSVMV UNIVERSITY (ENATHUR, TAMILNADU, INDIA)

C.K. Gomathy[1], Dr. S Rajalakshmi[2], M.Prema[3]
[1]Research Scholar, Department of Computer Science & Engineering, SCSVMV University, Enathur, India.
[2]Professor, Department of Computer Science & Engineering, SCSVMV University, Enathur, India.
[3]Lab Instructor, Department of Computer Applications, SCSVMV University, Enathur, India

Abstract
Mobile phones are becoming a new well-liked platform for business applications. The number of mobile user's increases daily and so does the need for efficient mobile data access and services. However, the conventional move toward to business application and service providers for mobile devices. This paper presents a novel trivial mobile SOA- based architecture for business applications running on to analyze which kind of mobile service connections used like postpaid, prepaid and analyze which kind of mobile network like 2G,3G and Scheme using like call rates, roaming charges,sim cost, Sim rates,validaity,value added service and Tariff prefer and how the people select new connection, which service they will prefer and who advised to take the connection of present provider and satisfied with customer service would they are like to change service provider in future.. This exploratory study investigated custom prototype of, and approach about, cell phones among university staff and students in a mature market and a rapidly growing new market by surveying people in each region. In this paper explores the Key findings from the similarities in the usage of phones and in the perception of mobile phone usage in SCSVMV peoples, Overall these results suggest SCSVMV in India use mobile phones differently from their other countries counterpart. The paper emphasizes on different influential factors affecting mobile purchase. If diverse sectors are thoroughly studied and analyzed, organizations willing to enter the emerging market will be able to promote their products and services in a much better manner leading to higher customer satisfaction and in an increased market size.

Index Terms— Mobile framework design, Service-provider design, Business Intelligence, Performance Management Systems, and Quality Management in mobile service.

For Correspondence:
gomathyckATgmail.com
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1. Introduction
Service Oriented Architecture (SOA) is an architectural style based on loosely coupled interacting mobile components that provide services. A service is a piece of functionality made available by a service provider in order to

deliver end results for a service consumer. A service consumer sends a service request to a service provider. The service provider returns a response to the service consumer containing the expected results. In service oriented computing (SOC), services are the crucial element to develop applications. SOC applies SOA to organize software applications and infrastructure into a set of interacting services.

The Service Oriented Architecture of a program or computing system is the structure or structures of the system, which comprise software elements, the externally visible properties of those elements, and the relationships mobile users among them. Mobile service has been used in every occupation, playing increasingly important role. Mobile service aims at improving productivity and realization times by gathering the analysis, design and implementation activities of a family of systems. Service Oriented Architecture is considered of highest importance to the mobile service. It is used to represent and communicate the system structure and behavior to all of its SCSVMV University with various concerns like staff, Student.

Service Oriented Architecture (SOA) has several core ideas, here we take mobile services that should be addressed in SCSVMV University:

A set of mobile services that a business wants to provide to their customers, partners, or other areas of an organization

An architectural style that requires a service provider, mediation, and service requestor with a service description

A set of architectural principles, patterns and criteria that address characteristics such as modularity, encapsulation, loose coupling, separation of concerns, reuse and composability

A programming model complete with standards, tools and technologies that supports web services, REST services or other kinds of services

A service provider solution optimized for service assembly, orchestration, monitoring, and management

2. Literature Review

The first phase of the research consists of a comprehensive survey of the published literature on the question of "Mobile service and Development". The main objective is to map ou t the current state of knowledge on mobile means of proper service and the bearing they have on social development, as reflected in relevant research publications. Since developments in this area have been greatly influenced by the activities of practitioners, in addition to traditional 'academic' sources (peer reviewed journals and conference papers), it is also important to take account of practitioner-oriented, non-peer reviewed sources (such as consultant's rep orts, official reports, and other occasional and published papers)

It have proposed a research question of transforming dependability requirements into corresponding mobile service constructs, by proposing first that dependability needs could be classified into individual types of requirements and second, an architectural pattern that allows requirements engineers and architects to map the effective service of the design.

Many mobile adoption studies seek to explain the phenomenal rates of mobile diffusion in the developing world; others focus on regulatory structures that permit or prohibit mobile adoption. The impact studies

Span a wide range of contexts: mobile connection services and SCSVMV University environment, communities and cultures. The rationale for both sets of studies is clear. It is important to describe how and why this connection getting occurred, and to understand its future direction. At the same time, rarely has a technology seemed to hold such a powerful sway over its users like 2G, 3G.

3. SOA Framework

The desire for enterprise systems that have flexible architectures, detailed designs, implementation agnostic, and operate efficiently continues to grow. A major effort toward satisfying this need is to use Service Oriented Architecture. Moreover, there is new research and development in order to achieve more demanding capabilities (e.g., workflow service composition with run-time adaptation to changing mobile service attributes) that have been proposed for service- based systems,

especially in the context of system of systems. A basic concept is for SOA to enable specifying the creation of services that can be automatically composed to deliver desired system dynamics while satisfying multiple Quality of service attributes in provider.

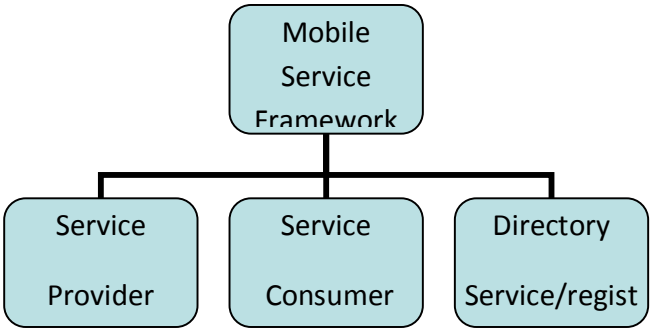


Fig-1: Mobile service framework

A fundamental SOA concept is to enable flexible composition of independent services in a simple way. The simple concept is crucial since it separates details of how a service is created and how it may be used. This kind of service provider is defined based on the concept of mobile and its realization as the broker service. The high-level description of the SOA principals does not account for the operational dynamics of SOA, especially with respect to time-based operations. Therefore, understanding the dynamics of a service-based system using simulation is important. Simulation can also support specific kinds of service-based mobile device that are targeted for business processes with specialized domain Knowledge.

4. SOA Resources

Mobile applications typically require different kinds of interfaces to the data. Despite their different purposes, these interfaces often need common interactions like multimedia support with the application to access and manipulate its data and invoke its business logic. The interactions may be complex, involving transactions across multiple resources and the coordination of several responses to an action.

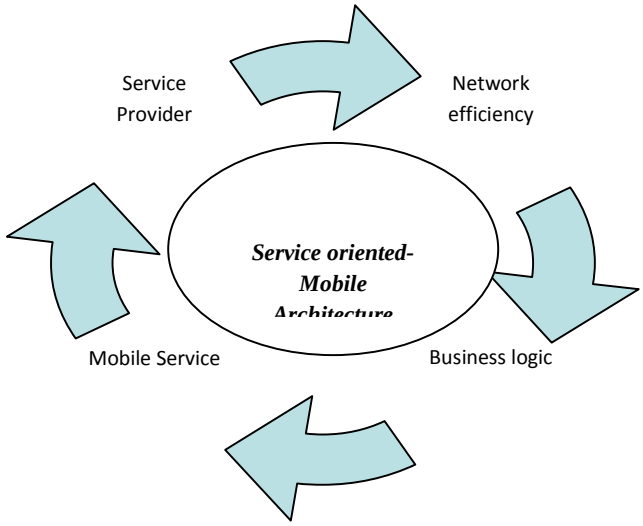


Fig-2: SOA Mobile Resource Activities

SOA creates an environment in which distributed applications and components may create independently of language and platform and focuses on the use of a relatively widespread pattern of communication between operations, enabling thus a model for homogeneous distribution and composition of components.

SOA is a model of components, providing an environment for building distributed systems.SOA applications communicate functionally as a service to the end user's applications and other services, bringing the benefits of low coupling and encapsulation for the integration of enterprises applications. SOA defines the rules of the participants as provider of services, customer of services and registry of services.

5. Mobile Service Provision

Mobile service provision (MSP) has been widely promoted by analysts and staffs, students as the architecture capable of addressing the mobile service needs of modern organizations in a cost-effective and timely manner. Perceived SOA benefits include improved flexibility and alignment between service provider processes and the end users.

Mobile Host is a provider of services built to run on mobile devices such as smart-phones and PDAs developed as a *Web Service Handler* built on top of a normal Web server. Mobile Host opens a new set of applications yet little

explored. They may be used in areas such as SCSVMV university location-based services, community support for mobiles. It also allows mobile operators increase their business without resorting to a stationary infrastructure. However, these additional flexibilities generate a large number of interesting questions for surveys which require further investigation. The design of a "Mobile Host" is going through many things, some issues where there is very little research; so far set up service provisioning is very limited to devices. The work in describes a model for the development of a Mobile Host system in general. Traditionally, mobile systems have been designed as SCSVMV where their group such as PDAs or phones is able to use wireless connections(optional) to gain access to resources (data and services) provided by central servers with the emergence of wireless networks, Ad-Hoc and powerful mobile devices it becomes possible to design mobile system using an architecture peer-to-peer.

SOA can be built in the mobile environment:

1. The interface must be compatible with the interface of SOA used in the mobile environment for students, staffs.
2. The space used by the service should be small in relation to the mobile device.
3. The service should not affect normal operations of the device.
4. A standard mobile towers that handle requests of network.
5. A provider of basic services for treatment of requests for SOA.
6. Ability to deal with competing requests.
7. Support the deployment of services at runtime.
8. Support for the analysis of performance.
9. Access the local file system, or any external device like a GPS receiver, using infrared, Bluetooth, Wi-Fi (optional) etc.

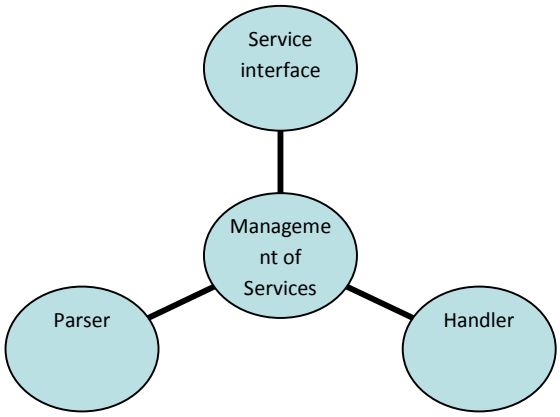


Fig-3: Mobile host Environment

SOA in mobile environment using technologies based on message for complex operations in several areas. Also, there may be many legitimate services intermediaries in the communication between doing composes a particular service, which makes the context of a security requirement end-to-end. The need for sophisticated message-level service provider end-*to-end* becomes a priority for a mobile Service.

6. Service Design Pattern

The main function of an mobile communication network in construction is to link the resources involved in a process with each other, the device control and the project network, including the college campus, hostel campus, and other areas inside the campus site. Because the backbone of a site-based communication network as well as its integrated electronic tools are exposed in the ‘open’ - similar to a Battlefield - they have to be protected with a reliable network connection system.

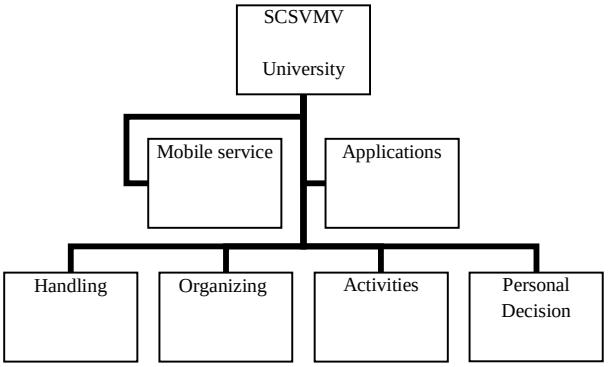
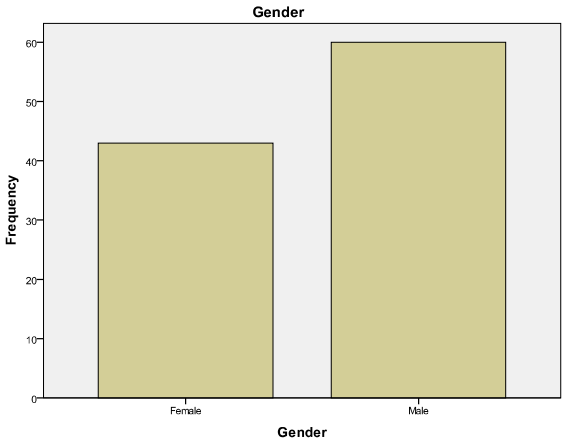


Fig-4: SOA Service design pattern



For new connection.
Which service Will you prefer * Present Conn. Cross tabulation

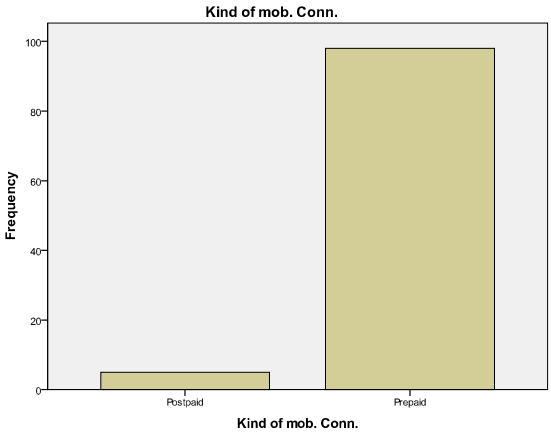
Count

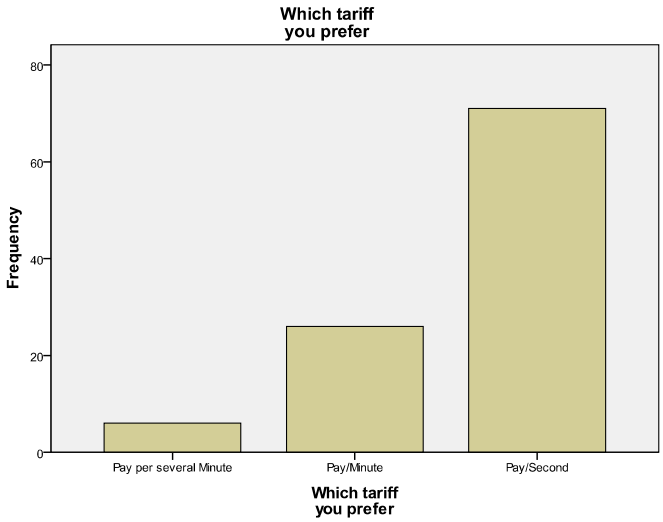
		Present Conn.							
		Aircel	Airtel	BSNL	Docomo	Idea	Reliance	Vodafone	Total
For new conn. Which serv. Will you prefer	Call rates	0	0	11	3	6	0	13	33
	Internet Charges	0	3	3	15	0	0	12	33
	Roaming Charges	5	0	0	0	0	0	3	8
	SIM Cost	0	0	3	0	0	0	0	3
	SMS rates	0	0	6	0	0	0	9	15
	Validity	0	0	0	0	0	6	0	6
	Value Added Services	0	0	5	0	0	0	0	5
Total		5	3	28	18	6	6	37	103

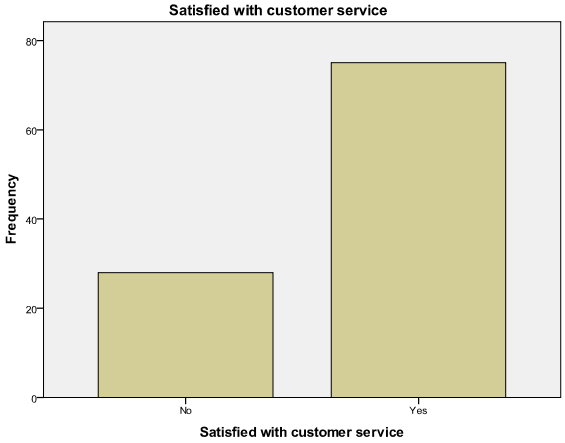
8. Mobile User Experience and Service Management

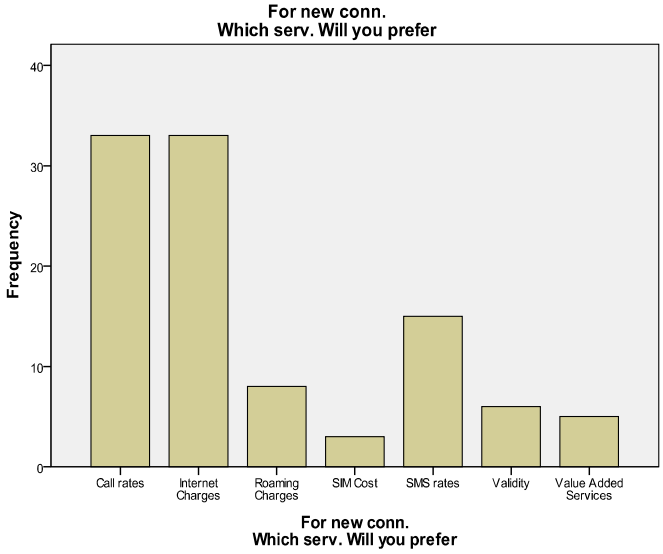
Mobile Service monitoring enables reliability across the mobile infrastructure in SCSVMV University. In mobile service Support and user self-service allow mobility to scale across the surrounding environments. It maintain a consistent direct identify along with help of questionnaire. Users should know how they are maintainable the service provider and all the elements of mobile design process. The following diagram represents the mobile users and capability of service provider.

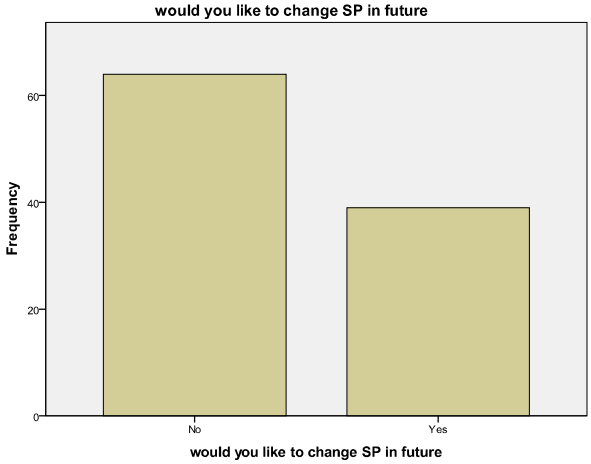
RESULT Analysis using with SPSS tools: (with help of questionnaire)

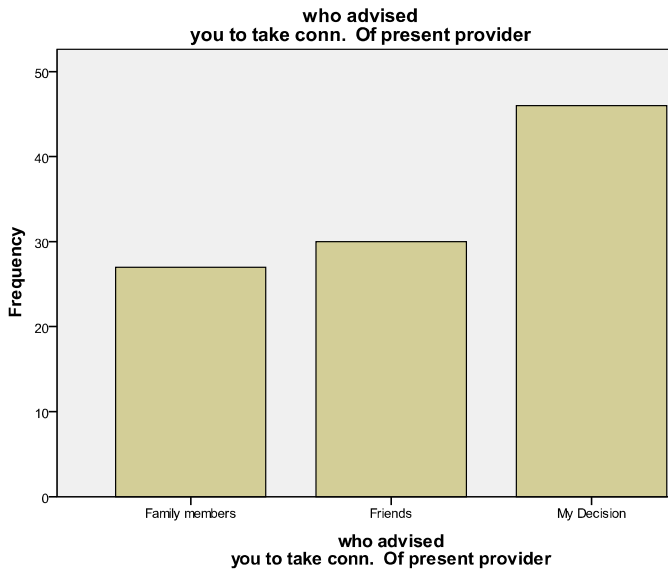


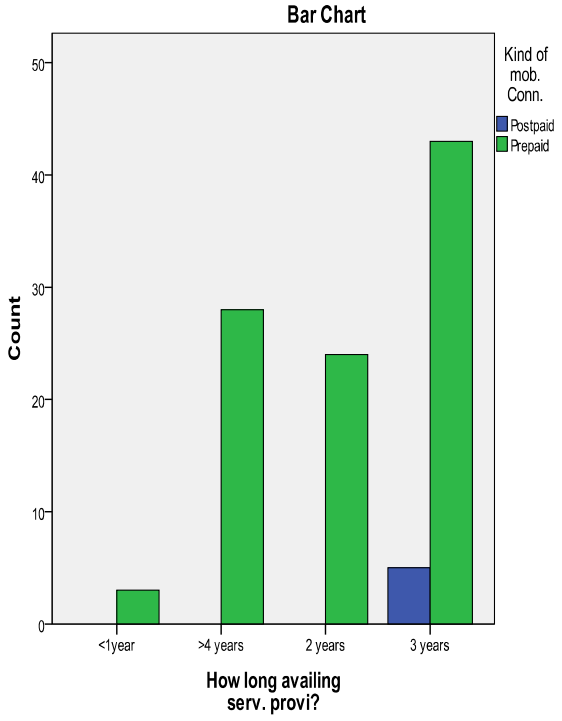

Which tariff you prefer
Frequency
Pay per several Minute
Pay/Minute
Pay/Second
Which tariff you prefer


Satisfied with customer service
Frequency
No
Yes
Satisfied with customer service


For new conn. Which serv. Will you prefer
Frequency
Call rates
Internet Charges
Roaming Charges
SIM Cost
SMS rates
Validity
Value Added Services
For new conn. Which serv. Will you prefer


would you like to change SP in future
Frequency
No
Yes
would you like to change SP in future


who advised you to take conn. Of present provider
Frequency
Family members
Friends
My Decision
who advised you to take conn. Of present provider


Bar Chart
Kind of mob. Conn.
Postpaid
Prepaid
Count
<1year
>4 years
2 years
3 years
How long availing serv. provi?

10. Conclusion

Service Oriented Architecture (SOA) has become the mobile service approach for architecting, implementing and integrating applications providing a standard but flexible mechanism for creating service provider processes and application functionality. As mobile SOA begin to claim majority share in the SCSVMV Portfolio, there are opportunities and challenges for the environment in implementing a robust and scalable integration service, business process definition and integration, governance and performance, event processing, and mobile service integration.SOA services bring strong leadership and extensive real-world implementation experience that can help organizations gain clarity and nimbleness in SOA mobile adoption. This roadmap and plan takes into consideration the SCSVMV organization's SOA maturity, service provider performance and future projects, the scale and extent of service, process and application integration, and quality measures in end users like staffs, students.

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