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Feasibility and Sustainability Model for Identity Management

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Abstract

National Identity projects and providing such identification to citizens in various countries around the globe has captured attention of late. Although the perceived benefits are numerous, nonetheless the challenges and bottlenecks for a successful rollout are many. The objective of this paper is to put forward the drivers and inhibitors for adopting a common identity management system across various organizations and to suggest a model for determining the feasibility and sustainability of such a system. The paper develops on TAM for proposing a model for identifying the drivers and inhibitors of managing such an identity management exercise. This paper highlights various factors affecting successful implementation of an identity management system and investigates the impact of these factors. The model suggested in this paper would allow organizations and policy makers to determine the critical factors for the implementation of an identity management system in large scale.

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1. Introduction

Many countries have implemented identity management by introducing national identity cards for their citizen, while some countries are still in a dilemma and are analyzing the consequences of such an initiative from various angles. The issues like privacy and data security has been the major concerns for the countries those are considering such a system. There have been various motivators for Governments to consider the option of issuing identification cards for the citizen. This ranges from protecting the country from terror attacks to achieving operational efficiency in providing services to the citizens. But there has been hardly any study on developing a model that could help a Government in analyzing the feasibility and sustainability of an identity management system. This gap in the existing literature has been a motivation for this study. Case study base research methodology (Benbasat, Goldstein et al. 1987) has been adopted in this study in order to come up with a model for determining the feasibility and sustainability of identity management system.

It has also been noted that different countries have different perspectives about various dimensions of identity management. The differences were visible in both motivators as well as inhibitors of the system. Considering these differences and the fact that the government of a country functions within an ecosystem of various organizations (viz. taxation department, electoral department, public distribution department, etc.), similar difference can be expected to exist in the perspectives of these organizations as well. Hence, in order to determine the feasibility and sustainability of a common identity management system that could be used by each of these organizations, it becomes very critical to understand and formulate the perspectives of each such organization. Taking this fact into consideration, this study focuses on developing a model that would allow the government in understanding various factors acting as motivators and inhibitors for the adoption of an identity management system as perceived by various organizations within the ecosystem.

2. Literature Review

2.1 Identity Management Initiatives by Various Organizations and Nations

Though not much work has been published about the factors affecting the implementation of identity management, there are reports that are available regarding the issuing of unique national identity card for citizens in various countries. It is interesting to know that

many countries like Belgium, Finland, France, Germany, Greece, Hong Kong, Italy, Netherlands, Malaysia, Portugal, Spain, etc. have gone ahead with the implementation of national identity cards and some of them have even made carrying the cards mandatory for the citizens, while countries like Australia and United States have not yet implemented such a system (Beynon-Davies 2006). Only after the incidents of terror attacks on United States of America and United Kingdom, have these countries started to seriously look into the possibilities of implementation of a national identity management system. In country like Australia, the major motivators for the implementation of national identity card was found to be national security, prevention of Government frauds, anti-money laundering, replacement of existing cards with a single multipurpose card and improving efficiency of government services. While the factors acting as inhibitors were privacy issues, political opposition and public opposition (Jackson and Ligertwood December 2006). Where as for Canada which is looking forward to implement such a system have recognized concerns for national security as the major motivating factor. In contrast to Australia, Canada enjoys a strong support from its citizens for the implementation of national identity cards. The major concerns for Canada are privacy issues, data security, possibility of function creep, technology gaps, risk of single point of failure and threat of racial discrimination. Existing of weak seed documents based on which the cards would be issued is also a matter of concern for Canada (Fontana October 2003).

United States of America that has faced strong opposition from within its nation towards the implementation of national identity cards for its citizens, identifies national security as the only motivator for the implementation for such as system, where as privacy issues, possibility of function creep, technology gaps and high cost as the major inhibitors (Rotenberg and Ngo May 2008). For countries like Belgium, Portugal and Spain who have already implemented national identity cards for its citizens identifies secured accessibility to e-Government applications, social security, child safety, improving efficiency of Government services, better accessibility to health care services and prevention of illegal immigration as the major motivators. While privacy issues, legal issues and data security as the major concerns for such systems (Mindrum January 2008; Fontana October 2003).

Most of the factors affecting the identity management as revealed from the existing literature are quite similar. For example, the strongest motivating factor for countries like United Kingdom (UK), Australia and Canada is national security. Fraud detection, anti-

money laundering and improving efficiency of Government services have been some of the other major factors that were found common among these nations. Privacy issues and political opposition has been found as the major factors acting as inhibitors for identity management for these nations. High cost of implementation, lack of clarity about the benefits and unclear plans about accessibility of data to various departments are some of the other factors that are found to act as barriers. There are also issues regarding the lack of clarity on the policies of data protection and the period for which such data can be retained by any organization or the Government. The reports suggest that the lack of clarity on the exact purpose and the multi-purpose nature of the identity cards that raises issues related to privacy and data protection. The factors acting as motivators and inhibitors for identity management in various countries are summarized in Table 1.

Table 1: Motivator and Inhibitors for implementation of National Identity Card

Motivators	Inhibitors
National security	Cost
Prevention of illegal immigration	Lack of cost benefit analysis
Public support	Legal issues
Anti-money laundering	Lack of public trust
Child safety	Political opposition
Commercial competitive advantage	Public opposition
Health care services	Technology gaps
Improve efficiency of Government services	Data security issues
Prevent fraud in Government services	Privacy issues
Provide secured access to e-Government applications	Threat of racial discrimination
Replace multiple cards	Function creep
Secured internet transactions	Process gaps
Social security	Weak seed documents
	Risk of single point of failure

2.2 Technology Adoption and Diffusion Model

According to the reports, different the factors mentioned in Table 1 were found to have different levels of impact on the implementation of identity management system for various nations. For example, in case of United States, the privacy issue was found to be more strong compared to countries like Italy and Greece (Fontana October 2003). Such differences in the strength of factors in adoption of technology by firms have also been observed (Cragg and King 1993). Effects of explanatory factors like perceived usefulness, organizational readiness, external pressure to adopt have been examined to determine the expected impact on technology adoption (Iacovou, Benbasat et al. 1995). Based on the existing literature, the factors in Table 1 were mapped with the decision variables of technology adoption as shown in Table 2.

Table 2: Factors Mapped with Major Decision Variables of Technology Adoption

Explanatory Factors	Factors Identified from Reports
Perceived Usefulness	
	Anti-Money Laundering
	Child Safety
	Commercial Competitive Advantage
	Health Care Services
	Improve Efficiency of Government Services
	Prevent Fraud in Government Services
	Provide secured access to e-Government applications
	Replace Multiple Cards
	Secured Internet Transactions
	Social Security
Organizational Readiness	
	Public support
	Cost
	Lack of Cost Benefit Analysis
	Legal Issues
	Lack of Public Trust
	Political Opposition
	Public Opposition
	Technology Gaps
External Pressure	
	National security
	Prevent Illegal Immigration
Process Complexity	
	Process Gaps
	Weak Seed Documents
Perceived Barriers	
	Data Protection and Retention Issues
	Privacy Issues
	Racial Discrimination
	Function Creep
	Risk of Single Point of Failure

Perceived Usefulness

Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis 1989). In the organizational context or in the context of a nation, perceived usefulness can be determined from belief of the stakeholders about the ability of a system in helping towards achieving various goals and objectives. The degree and dimensions of perceived usefulness of an identity management system based on national identity cards was found to vary from nation to nation. The reports suggest that the some factors like child safety and replacement of multiple cards with a single card were considered more important in

some countries as compared to others. This suggests that even with a same country, different government, and non-government organizations would have different dimensions and levels of perceived usefulness of the system. Hence, in order to determine the feasibility and sustainability of an identity management system which would be used by these organizations, it becomes very important to determine dimensions and degree of usefulness as perceived by various organizations who are stakeholders of the system.

Organizational Readiness

Organizational readiness refers to the level of financial and technological resources of the firm (Iacovou, Benbasat et al. 1995). Financial readiness indicates the availability of funds that would be required for implementation as well as working of the system. In many cases it has been found that lack of proper cost-benefit analysis has made a negative impact on the readiness of a nation to go ahead with the implementation of a common identity management system. The technological resources available with the organization for the implementation of the system would also determine the organizational readiness. In addition to these two factors, for a nation to come up with a common identity management system, it has been found that the amount of political opposition and public support to be factors affecting the readiness of the nation. Moreover, the strengths and weakness of the nation like corruption, black marketing, etc. would also have an impact on the readiness.

External Pressure

External pressure refers to the environmental factors of the organization that affect the feasibility and sustainability of the system. For instance, increase in terrorist activities and illegal immigration has been found to act as external factors that are forcing the government of nations to implement an identity management system.

Process Complexity

Based on four different world views, process can be defined in four different ways – Activity oriented: a process is a set of partially ordered steps intended to reach a goal. Product oriented: a process is a series of activities that cause successive product transformations to reach the desired product. Decision oriented: a process is a set of related decisions conducted for the specific purpose of product definition. Context oriented: a process is a sequence of contexts causing successive product transformations under the influence of a decision taken in a context (Rolland 1998; Howard, Rolland et al.

2004). A high level of complexity involved in the process of system implementation is expected to have a negative impact on the feasibility and sustainability of identity management system. Reports suggest that the existing process gaps and weak seed documents based on which an identity card can be issued, contributes to the dimension of process complexity.

Perceived Barriers

The types and intensity of perceived barriers about system adoption varies from organization to organization and high levels of perceived barriers negatively affect the adoption of technology (Chau and Tam 1997). The existing reports on national identity cards also reveal similar facts. For most of the nations, privacy, data protection, and retention issues in addition to other issues like risk of single point of failure, function creep and risk of racial discrimination have been the major factors related to adoption of such a system.
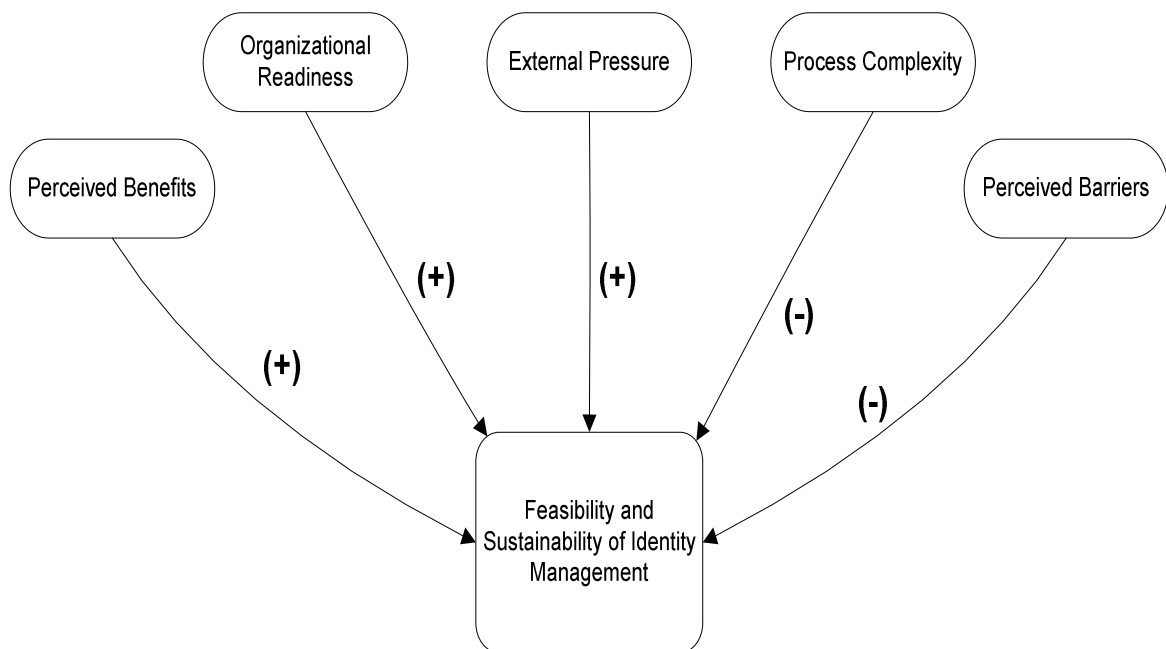
Figure 1: Feasibility and Sustainability Model for Identity Management

Out of the five factors, three factors (perceived usefulness, organizational readiness and external pressure) are expected to have positive impact on the feasibility and sustainability of identity management, while the other two factors (process complexity and perceived barriers) are expected to have negative impact on the system.

3. Research Methodology

3.1 Sample Description

In order to study the viability of the model for the implementation of identity management system for a nation, it was required to consider a case with fairly similar complexity. Self Employed Women's Association (SEWA) being an NGO working in the rural parts of India and having more than half a million members spread across fifteen districts of Gujarat, was found to have many similarities with a nation like India when discussed in the context of identity management of its members. SEWA provides various services to its members through fifteen SBUs which are managed independently. Each SBU of SEWA provides different types of services to its members starting from training to financial services like banking and insurance. This structure is similar to various departments of a Government providing different types of services to its citizens. An identity management system was required at SEWA in order to provide integration in activities conducted by the SBUs. Similar is the case for most nations looking towards incorporation of national ID cards. The members of SEWA were working in eighty four different trades ensuring enough diversity within the sample. The fact that all the members as well as the management of SEWA are women, might pose a gender bias in the sample. However, the existing literature on technology adoption and diffusion models suggests gender to be an insignificant factor.

SEWA, registered as a trade union in 1972, evolved as an organization of poor, self-employed women workers who earned their living through their own labor or small businesses. These women, unlike the workers in the organized sector, did not obtain regular salaried employment with welfare benefits. As per the estimates of the female labor force in India, more than ninety four percent had been in the unorganized sector. This unorganized sector consisted of jobs as diverse as hawkers, vendors, carrying loads of goods to markets, stitching clothes at home, rolling bidis[1] and weaving cloth. SEWA's main goals had been to organize women workers to achieve their goals of full employment and self-reliance. For SEWA, full employment meant employment whereby workers obtained work security, income security, food security and social security (at least health care, child care and shelter). Similarly, self-reliance meant that women should be autonomous and self-reliant, individually and collectively, both economically and in terms of their decision-making ability.[2]

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1 "bidi" – A type of cigarette made out of raw tobacco leaves
2 http://www.sewaict.org/SEWA_Genesis.asp (Accessed on January 5, 2009)

A strong, disciplined and transparent electoral structure of SEWA had always been the strength and inspiration for its rapid growth. The electoral structure provided equal opportunity to the members for actively participating in the management of the organization. This helped the organization to keep the members and their interests at the center and the whole organization bounded and focused on its mission and goals. SEWA, being a trade union, mandated its members to renew their membership every year by paying a nominal membership fee of five rupees[3] (as of year 2009). The aagewans (leaders) were responsible for collecting the membership details and fees every year. The aagewans were also the members of SEWA and were selected as leaders within a village or locality by the members themselves.

SEWA's main goal had always been making the lives of its members better by preparing women workers for full emploreliance4. SEWA empowered women to ensure that every family obtained full employment. This was carried out through the joint action of union and cooperatives. In order to provide better services to the members, various SBUs of SEWA had evolved during the years. The services provided by SEWA could be categorized into training/capacity building, social security, healthcare, childcare and housing. Each of the SBUs were associated to a specific service. For example, the objective of SEWA bank was to help the poor self-employed members in breaking out of the vicious cycle of poverty and guide them through the process of capital formation. Similarly, SEWA Insurance was focused on ensuring social security for its members. SEWA Academy, SEWA Manager's School and SEWA Life School provided education and training to the members. SEWA Trade Facilitation Center provided support for marketing and production of various artesian products to the members. More than fifteen such SBUs worked independently and contributed towards the common goals set by SEWA.

3.2 Data Collection

Data was collected through face-to-face interviews with the decision makers and focused group discussions with the district coordinators, aagewans and spearhead team members of SEWA. Most of the interviews and focused group discussions were conducted in the local language in order to ensure natural expression from the respondents. Observations were done by conducting field visits in three districts (Ahemdabad, Anand and

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[3] 1 rupee = 0.022 USD (As on 26th October, 2009)

[4] Emploreliance: Term used by SEWA for full-employment and self-reliance

Surendranagar). The visits were intended to understand the ground reality and the perspective of the organizers at the local level. Out of the three districts selected, Ahmedabad was most advanced in terms of ICT infrastructure and other facilities, Anand was moderate in the same context, while Surendranagar was the remotest of them all and is very near to a salt desert where majority of the members are salt farmers.

Existing documents of the SEWA and its SBUs were reviewed in order to understand the working and interrelation of the organization. The documents included various reports as well as material published on the web. We also thoroughly studied the existing ICT systems implemented at SEWA in order to understand the technology readiness of the organization.

4. Empirical Findings

Analysis of the collected data revealed various factors affecting the feasibility and sustainability of identity management.

4.1 Perceived Usefulness

There was various perceived usefulness from the implementation of an identity management system at the organization. Some usefulness was focused towards the better working of the management, while some were more inclined towards benefiting the members. SEWA being a member based organization, it is very critical for the organization to know exactly who their members are. Without an existing identity management system for its members in place, SEWA and its SBUs were not in a position to efficiently identify their members. In the absence of a proper identity management system, the organization is not even in a position to determine how many members are new and how many of them are existing members. This also restricted the organization to determine the dropout rate of the members.

In the absence of a proper identity management system, there exists a huge lag in various tasks being performed at the organization. For example, the membership slips that are filled by the members are supposed to reach the SEWA reception center (SRC) latest within three months from the date of issue, but the analysis of the existing data revealed that in some cases the books took around an year to reach the SRC. Further, there is a huge time lag in digitizing the membership data and hence the top level management was

not able to access the latest information about membership. This further led to difficulty in proper planning of resources.

Each SBU of SEWA handles different welfare activities for its members. Though these activities are conducted independently, a better insight can be gained by looking at the participation of members in these activities more holistically. Currently, due to the lack of any unique identity for the members, this holistic view of the members' activities cannot be captured. This type of integration would help the SBUs to efficiently coordinate their activities and meet the needs of the members in a better way.

The fact that many private companies are finding the urban markets to be very much saturated for their products and are looking forward towards the rural markets to sell their products. But the needs of the rural population are quite different than the urban population and hence the companies with no or very little experience in marketing their products in the rural markets are finding it difficult to make their presence felt. It was found that the decision makers of SEWA are very much aware about this fact and are eager to gear-up their efforts to grab this opportunity in order to ensure better products and services for their members at a cheaper rate. This can be achieved by negotiating with various companies in providing them with information about needs of their members and get a better deal.

The group discussion with the aagwans clearly revealed that they face criticism from the members for not being able to provide them with some kind of identification. The members working in various unorganized sectors had to face different types of challenges and enormous difficulties in dealing with the Government and the police. The members had a strong feeling that by having an identity card from SEWA, they would be able to tackle many of their issues more effectively and efficiently. This would give them a better sense of social security.

All the SBUs of SEWA work independently and provides services to the members. The district associations act as hubs for the SBUs for delivering services to the members of the respective districts. In the absence of an identity management system, the coordination among these SBUs in providing service to its member is lacking. Though the district associations and respective spearhead teams coordinate the activities, there remains a huge scope of improvement. The top level management of SEWA perceives an

efficient identity management system for its members to provide a base for the coordination among the activities of these SBUs.

4.2 Organizational Readiness

For any organization, the economic factors becomes a very critical dimension in the decision making process for implementation of a new system. SEWA being an NGO primarily depends on the funds generated through its activities and receipt of donations. The high cost related to the implementation of an identity management system is found to be a matter of concern for each of the SBUs of SEWA. Further, as each SBU of SEWA is related to different activities and work independently of each other, the political landscape among the top level management of each SBU also plays a significant role in determining the course of such initiative. High cost of the system and internal politics was found to act as negative factors for determining the organizational readiness for adoption of identity management system. When compared between these two factors, the political constraint was found to be weak which might be due to the fact that all the SBUs are bound by the common goals of SEWA. On the other hand, cost of the system was found to be a very strong component for determining organizational readiness.

Another dimension that was found to affect organizational readiness was the availability of resources. The resources would include technological as well as manpower that would be required to implement such a system. In this case, all the SBUs of SEWA was found moderately sound in terms of technological resources. Almost all the offices were equipped with basic hardware resources like computer, printer, scanner, webcam, and telephone connection (in some cases broadband connection). Though in some remote districts, connectivity was found to be an issue due to non-availability of proper mobile or broadband connection. The availability of skilled manpower in this case was found to be a difficult task. Most of the aagewans involved in the collection of membership for SEWA are illiterate. However, the level of motivation observed in them was very high. It was also found that this high level of motivation have helped them to get trained in many technical skills including computing up to certain extent. The source of motivation in this case was found to be the electoral structure of SEWA that allows a capable and active member to climb up to the level of top level management. Hence, the other factors affecting organizational readiness were availability of technological, skill of personnel, motivation of personnel and organization structure. Here, limited availability of skilled personnel and technology was found to be negatively affecting the organizational

readiness in the implementation of identity management, but was within the control of the organizations and were indirectly related to cost. Where as, motivation of the personnel and organization structure was strongly supporting the cause of organizational readiness.

4.3   External Pressure

SEWA and its SBUs being registered as a trade union, is mandated by the Labour Ministry of India to enroll all its members with some enrollment fee each year. The records of enrollment are being audited by the Ministry and any discrepancy is being questioned. This forces SEWA to maintain the records of all its members each year. Another external factor that motivates SEWA and its SBUs to look towards the implantation of an efficient identity management system is the growth of other NGOs who adopts various moral and immoral techniques to elude its members to join their group. These two external factors were found to be the motivators for the implementation of an identity management system at SEWA. However, both these factors were found to be very weak in its impact. This can be conclude from the fact that there were not many NGOs as strong in organizational structure and nor did any other NGO had an identity management system in place. Considering the pressure from the Labour Ministry, it was found that though the Ministry mandated the organization to maintain the details of its, it did not force it to have an identity management system in place.

4.4   Process Complexity

Overall process complexity can be determined based on two dimensions: the complexity of the tasks involved and the size of the sample to be identified (i.e. the total number of members to be covered). The process of identity management would typically involve enrollment, identification/verification, authentication, updation and deletion. Here the process of enrollment would include collection of data of members for dimensions like name, residential address, trade, trade address, age, marital status, and photograph. None of these dimensions are difficult to capture and hence the enrollment process would be low in complexity. In case of verification/identification of the member, she would be required to produce a valid ration card or voter identity card which would act as an identifier for the member. The ration card would also act as a link for the member with her family. However, it was found that there exist some operational challenges in collecting these seed documents for verification. The discussions with the aagewans revealed that many of the members were not in a position to produce these documents at the time of enrollment. Membership generation being one of the core process for SEWA,

the rule for producing the seed documents at the time of enrollment could not be made very stringent. Hence, the process of validation/identification remains moderately complicated with these constraints.

As the members are supposed to renew their membership every year, the process of deletion is very low in complexity. But, through analysis of the existing data and interviews it was found that there exist a high degree of volatility in the captured dimensions. Even the basic dimensions like first name, middle name, and address were subject to change. Hence the process of updating the membership details is moderately complex in this context. All the process of identity management discussed up till now remains common for all the SBUs of SEWA. The process of authentication would be required at the time of service delivery and the risk of violating this process would vary for different SBUs depending upon the type of service being delivered by the respective SBU. For example, members availing the services of the SEWA bank would involve financial transactions and hence would require more stringent authentication compared to the SBU of SEWA that is responsible for providing training to its members.

4.5   Perceived Barriers

The issue of data security and right to access and retain information about various transactions made by the members was found to be of major concern for the top level management of majority of the SBUs. Even the information regarding the whereabouts of the members was considered to be very critical and confidential by SEWA. There were serious concerns about where the data should physically reside and how various SBUs would be authorized to access the data. A lot of emphasis was given to setting up of a data center at the premises of SEWA rather than hiring a space from any existing data centers. Though, privacy was not found to be an issue either from the perspective of the top level management or from the members. Hence, in this context, the strength of perceived barriers on the feasibility and sustainability of the identity management is much low.

5.   Discussion and Implications of Research

Perceived usefulness of the identity management system by the top level management as well as the members of SEWA was found to be very strong and directly related to the goals and objectives of the organization. This provided a very strong base for decision making about the implementation of identity management system. Thus, perceived

usefulness is found to a very strong positive factor for the feasibility and sustainability of the identity management system. Four dimensions viz. cost, non-availability of technological resources, lack of skill of the personnel and internal politics were found to negatively affecting the organizational readiness. While the effect of cost as a dimension was found to be strong, rest of the dimensions had a weak impact on the organizational readiness. Motivation of the personnel was strongly affecting the organizational readiness in a positive way. Based on these dimensions, a moderate level of organizational readiness was found to have a moderate level of impact on the feasibility and sustainability of identity management. However, the dimensions negatively affecting the organizational readiness was fairly under the control of the organizations and hence, under the influence of high perceived usefulness, organizational readiness may improve with due course of time.

Process complexity was found to have a strong negative impact on the feasibility and even more on the sustainability of the identity management system. Non-availability of seed documents for many members and high volatility of captured dimensions were found to have a strong negative impact and increase the process complexity. While low complexity of the dimensions to be captured had a very weak positive impact. The fact that process complexity is not under the control of the organizations, make the factor very critical for determining the feasibility and sustainability of the system. Moreover, in the given case, SEWA was not in a position to strictly enforce each and every aspect of the process on its members. Hence, the only way through which the negative impact of this factor can be reduced is to increase the effect of perceived usefulness for the members.

While external factors such as terrorism and illegal immigration was found to be very strong factors affecting the implementation of identity management system for various countries, the same was not found in case of SEWA. Only two and that too very weak dimensions (viz. Government regulations and competition from other NGOs) were found to constitute the external pressure factor. This factor was found to positively affecting the feasibility and sustainability of the identity management system. Perceived barrier was found to have a very moderate negative impact on the feasibility and sustainability of identity management at SEWA. Though the concerns of privacy and data security was found to be very strong negative dimensions for majority of the nations considering implementation of national identity cards, in case of SEWA, these dimensions were found to be weak determinants of perceived barriers. All these dimensions and their effect on

the factors of the model are shown is Figure 2. The thickness of the lines connecting the dimensions and the factors demonstrate the strength of effect.

The model explained in Figure 2 demonstrated the effects of perceived usefulness, organizational readiness, external pressure, process complexity and perceived barriers on the feasibility and sustainability of identity management system. During the study it was also found that the dimensions and its effects on the factors of the model vary from organization to organization. Hence, for a system that is to be used in a multi-organization environment, all the factors and their related dimensions need to be examined from the perspective of each organization involved in the exercise. In the case of a nation intending to implement such a system needs to analyze these factors from the perspective of its different departments.

Figure 2: Effect and Strength of Identified Dimensions

6. Conclusion and Further Research

This study reveals that even though various factors affect the feasibility and sustainability of identity management, the intensity of the factors differ from organization to organization. In case of SEWA, three dimensions (viz. perceived usefulness, organizational readiness, and external pressure) were found to positively affect the feasibility and sustainability of the identity management system. While, process complexity and perceived barriers were found to be the dimensions to have negative impact on the adoption and sustenance of the system. The effect of perceived usefulness and process complexity was found stronger compared to the other dimensions. Various factors were identified that contributed to each of these dimensions. These factors were also found to vary from organization to organization. Thus, it can be concluded that in order to determine the feasibility and sustainability of an integrated identity management system, it would be necessary to identify the factors contributing to each of the five dimensions and also determine their intensity and impact on the system for each organization.

As the study was conducted under the context of a single organization, the diversity in goals and objectives of the organization was limited. Further research needs to be conducted on sets of organizations having more diverse and independent goals and objectives. Based on the study, a framework can be suggested that would help to determine the factors influencing the dimensions mentioned in the model. These factors are expected to vary from organization to organization and have difference in the strength in impacting the feasibility and sustainability of identity management system.

References

Benbasat, I., D. K. Goldstein, et al. (1987). "The Case Research Strategy in Studies of Information Systems." <u>MIS Quarterly</u> **11**(3): 369-386.

Beynon-Davies, P. (2006). "Personal Identity Management in the Information Polity: The Case of the UK National Identity Card." <u>Information Polity</u> **11**: 3-19.

Chau, P. Y. K. and K. Y. Tam (1997). "Factors Affecting the Adoption of Open Systems: An Exploratory Study." <u>MIS Quarterly</u> **21**(1): 1-24.

Cragg, P. B. and M. King (1993). "Small Firm Computing: Motivators and Inhibitors." <u>MIS Quarterly</u>: 47-60.

Davis, F. D. (1989). "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology." <u>MIS Quarterly</u> **13**(3): 319-340.

Fontana, J. (October 2003). A National Identity Card for Canada? Report of the Standing Committee on Citizenship and Immigration. Ottawa, House of Commons, Canada.

Howard, N., C. Rolland, et al. (2004). Process Complexity: Towards a Theory of Intent-oriented Process Design. <u>2nd International Conference of Information and Systems</u>. Egypt.

Iacovou, C. L., I. Benbasat, et al. (1995). "Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology." <u>MIS Quarterly</u>: 465-485.

Jackson, M. and J. Ligertwood (December 2006). "Identity Management: Is an Identity Card the Solution for Australia?" <u>Prometheus</u> **24**(4): 379-387.

Mindrum, C. (January 2008). "It's in the cards." <u>Outlook</u> **1**.

Rolland, C. (1998). A Comprehensive View of Process Engineering. <u>10 International Conference CAiSE'98, B. Lecture Notes in Computer Science</u>. C. Thanos. Pernici, Springer.

Rotenberg, M. and M. Ngo (May 2008). Real ID Implementation Review: Few Benefits, Staggering Costs, Electornic Privacy Informatin Center.