

Understanding ICT Enabled Organizational Transformation

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Abstract

The turbulent environment of the organizations and rapidly change in Information Communication Technology (ICT) require organizations to be transformed for their survival in future. To understand the phenomena of ICT enabled organizational transformation from a socio-technical perspective a case study has been conducted rigorously in a multinational company. The interviews of the senior management and other stakeholders involved in the process of transformation were conducted and transcribed. Further analysis of the study led to the findings that proactive strategy of organization regarding people, process and technology is an essential aspect for organizational transformation. Such aspects may be termed as potential “means”. Moreover, change management, knowledge management, business process management and IT governance served as “enablers” of ICT enabled organizational transformation. The issues and challenges faced by the top management during transformational process were explored and the role of potential enablers in proactively managing issues and challenges are discussed. The potential means and enablers identified played an effective role in the successful transformation initiative. Finally, the research findings provide guidelines to the organizations interested in transforming themselves for their survival in future.

Keywords ICT, Organizational transformation, Knowledge management, Change management, IT governance, Business process management

The organizational transformation is not just a routine change but a fundamental change that substantially may alter an organization’s relationships with one or more key constituencies, e.g. customers, employees, suppliers, and investors (Rouse and Baba 2006). Public as well as private sector organizations are in constant state of flux and have a sense of feeling that why not such enterprises to be transformed to meet the current challenges of globalization, mergers, acquisitions new markets and new technologies (Davenport 2013; Eddy 2014). Research scholars have an axiom that organizations may die if they would be unable to introduce major changes in their work processes (Hall, 2002; Drucker, 1999). Organizational transformation seems to be a matter of survival to compete globally (Min and Santhapparaj, 2011; Khan, 2017). The organizations need to be innovative and transformation should take place at a pace that might be greater than the promptness required to cope with change in their environment (Robert, 2014; McKeown and Philip, 2003). In the current era, the adoption of Information Communication Technology (ICT) demands change in business

approach for survival and to be competitive in the global environment (Al-Debei and Al-Lozi 2012).

It claims that rules of business may be changed to get true benefits of new technology. Organizations need to adopt futuristic approach towards customers, products and services to meet the challenges ahead (Hammel and Prahalad, 1994). ICT evolution has become the major driving force in initiating and introducing a major change in the organization (Hanna 2009). For example, the adoption of ERP systems played a revolutionary role to change traditional business processes by introducing the concept of Business Process Reengineering (BPR) in the organizations (Hammer 1990). The success rate of ICT enabled organizational transformation is questionable as implementing organizational changes associated with such technology effectively remained a difficult, complex and challenging task. Despite such challenges the top management still advocates that organizations need to be transformed using advance ICT technologies to achieve competitive advantages. However, just adopting advanced technologies is not panacea but considerations must be given to socio-technical aspects for transformation to be successful (Ahmad and Malik, 2016; Eddy 2014; Chen and Nath 2008; Nograšek and Vintar 2014). Keeping in view complexity of organizational transformation the past research studies advocate to understand such complex phenomena and further explore means exploited by the top management to make transformation a success story in organizations (Molla and Bhalla, 2006). To fulfill this objective an exploratory case study has been conducted in a multinational company in Pakistan. The objective of this research is to understand the process of ICT enabled organizational transformation along with the challenges and issues faced by the management. Furthermore, the lessons learned may provide guideline to the management interested in transforming their organization in future.

Although the ICT enabled organizational transformation got popularity in the developed countries, however, it is very unfortunate that transformational potential of ICT has not yet been well explored and realized in the public/private sector organizations of developing countries (Hanna, 2009). The past research findings regarding ICT enabled transformations carried out in developed countries may not be fully applicable in their true sense in developing countries because of varied cultural factors (Hanna, 2009; Mattila et al., 2011). Keeping in view the facts mentioned above there is a dire need to understand the complex process of ICT enabled organizational transformation in its true sense.

Literature Review

ICT enabled organizational transformation seems to be a complex phenomenon. The success rate of organizational transformations is not encouraging and it appeared as one of the challenging task for top management to deal with such complex matter

(Rouse and Baba 2006). The past research revealed that 50% of ICT enabled transformation initiatives almost failed (Ojiako and Maguire 2008; Heeks 2002). The failure of ICT enabled organizational transformation might happen due to different reasons such as dealing organizational transformation from technical perspective rather than socio-technical one, lack of BPR, effective communication, knowledge management and change management etc. (Kotter, 95; Almashari et al, 2001; Galliers and Leidner, 2007; Kim et al., 2007; Irani et al., 2007; Hughes 2016; Anjum, 2017). In order to understand the complexity and challenges of organizational transformation process, it is direly needed that the relevant aspects may be explored and documented at its best (Rouse and Baba, 2006; Chen and Nath 2008; Nair et al., 2014). Moreover, how organizations manage people, process and technology successfully may further be investigated for its deep understanding (Min and Santhapparaj 2011).

The importance of socio-technical aspects in an organizational transformation has been highlighted in the past research. Rouse and Baba (2006) claimed that organizations who have introduced fundamental change in their working environment may face challenges related to people, process and technology. Organizations may face social as well as technical challenges during ICT enabled organizational transformation. Treating technological change or people change individually may result in failure of transformation (Srinivasin and Nightingale, 2011). Orlikowski and Barley (2001) also stressed the need for exploring social aspects of transformation rigorously for its deep understanding. Organizational transformation may not achieve the real success without involvement of relevant stakeholders (i.e. employees, customers, vendors) in the transformation process. According to Hammer and Champy (1993) technical challenges are easy to manage than social challenges. How can organizations manage the social aspects of change during transformation process is a question of interest? It invites attention of the researchers to understand the complexities and its challenges. There exist a need to explore different factors that may enable the transformation process to be smooth and also help in minimizing the challenges and issues. This research attempted to understand the process of ICT enabled organizational transformation from socio-technical perspective.

Research Methodology

ICT enabled organizational transformation is a complex and context specific phenomena. The case study is considered a preferred method that may improve conceptual and descriptive understanding of the complex phenomena to be investigated (Yin 2009). In order to understand the process of ICT enabled organizational transformation an exploratory case study has been conducted in a multinational company in Pakistan. This case study was part of PhD research work of Khan (2017).

The organization selected for this research has gone through a major transformation few years back. Interviews of the top management involved in the process of transformation were conducted and transcribed. Moreover, the transcribed interviews were verified from the interviewees. The informal discussion with subject matter experts (SMEs) also helped a lot in understanding the issues and challenges faced by this company. In addition to interviews and informal discussions, the documentation and observation were used to collect relevant information during the case study. The construct validity was ensured at the data collection phase by using multiple sources of evidence. In addition to formal interviews of the top management, the necessary documentation was also accessed and analyzed. To ensure construct validity further, the transcribed interviews were reviewed and validated by the interviewees. Final case study reports of were reviewed by some of the key respondents of the organization.

Case Study

The organization selected for this case is one of the multinational companies in Pakistan. The company has approximately 50000 employees and it is operating in more than one hundred countries all over the world. The top management was facing different challenges regarding reduction in operational cost, inefficient work processes, lack of IT infrastructure and services, lack of globalized view and availability of timely information at the global level for effective decision making. The management desired to reduce operational cost and recognition at global level. The management took the challenge to transform this company adopting best business practices, standardized processes and state of the art standardized ICT infrastructure to compete globally. The company name “XYZ” is anonymous because the management was not willing to disclose its identity.

Need of Transformation

The top management engaged professional consultants to analyze the performance of the company. Finally the consultants submitted their report to the top management which revealed the following major causes that adversely affected organizational performance.

- The operational cost of this company was too high as compared to its competitor. It was cause of financial loss leading to declining in share price of the company.
- Inconsistent work processes being practiced were causing lot of delay in reporting and integration of information for centralized decision making.
- Lack of ICT infrastructure and services required and
- Lack of updated information for strategy formulation at the global level.

The top management shared these problems/issues with stakeholders and a consensus was developed that company should be transformed to cope with such challenges. Resultantly, a transformation strategy was formulated by the top management to proceed further in this context.

Transformation Strategy

Different aspects that need consideration and emphasis in developing strategy for transformation of organization were enquired/ explored during interview of managers involved. One of the managers said:

People, process and technology were important wheels [3 wheels vehicle] we ensured their alignment for smooth transformation journey

Furthermore, other aspects explored were:

- a. Participation of stakeholders (Business process owners, HR, IT etc.)
- b. Reengineering of business processes
- c. Outsourcing of IT services
- d. Imperatives of change management
- e. Promoting knowledge sharing practices
- f. IT governance

How such elements led to transformation are explained in upcoming part of this case study.

Transformation Process: A detailed view

The top management initiated Global Integration Program (GIP) to address the issues and challenges identified by the consultants. Three programs were launched under GIP initiative. The Program-I addressed business process standardization aspects regarding marketing, sales, finance, HR and supply chain. The Program-II dealt with outsourcing of IT related tasks whereas Program-III handled change management aspects necessary to manage and sustain transformational activities carried out during Program-I and II. The detail of three programs along with challenges faced by the organization is explained in upcoming section.

Program-I (P-I): Process Standardization

The process standardization was entrusted to a team called “Dream Team”. The members of dream team were selected based on their previous experience, expertise and knowledge about processes and most importantly their knowledge sharing attitude. One of the managers was of the view:

We selected members of dream team on the basis of their knowledge and skills and most importantly their knowledge sharing attitude.

The efforts made by the dream team regarding process standardization are summarized as under:

- Learned existing processes
- Chalked out inconsistencies among in work processes in different regions
- Identified best practices
- Proposed standardized process with the consultation of HR and IT professional to meet the technological and human resource requirements
- Recommended change in the current structure and future roles/responsibilities of individuals.
- Defined governance mechanism for processes management.

Program II (P-II): Outsourcing IT services

P-II dealt with outsourcing of IT support and services. The IT manager said:

One of the significant initiatives of our GIP [transformation initiative] is outsourcing of IT services through global vendors. We want 24/7 service throughout the world. We achieved our objective by selecting best of the available vendors in the world

To accomplish the purpose, five vendors of best repute were selected. The collaborative efforts of vendors and IT team eventually managed the overall IT infrastructure and relevant task assigned. Consequently, outsourcing of IT management and services altered the roles and responsibilities of IT personnel. The IT department was entrusted responsibility to ensure IT services rendered by global vendors. One of the service managers shared his thoughts and said:

Since we have outsourced IT services, now we are not worried about the installation, server management and maintenance etc. My role is changed from network administrator to service manager.

The implementation of P-II addressed the issues and challenges related to IT infrastructure and services identified by the consultants. Furthermore, the global IT team developed ICT governance mechanism for this company to be implemented at the global level which addressed the strategic aspect of ICT governance in the organization. The management preferred to adopt Information Technology Infrastructure Library (ITIL) framework as a guideline in developing IT governance plan and implemented some of the features to ensure selection, acquisition and management of services from vendors.

Program III (P-III): Management of Transformation Process

The program P-III led to forming a team called Information and Change Management (ICM). The team having expertise in promoting knowledge sharing culture and managing change was entrusted responsibility by the top management to create supportive environment

and developing trust of employee in change initiative leading to transformation to happen in a successful manner. One of the managers said:

People are important part of our organization. Our new MD gave clear instructions to the management to respect people and provide them environment where they feel motivated. We need to build their trust.

The interviews, informal discussions and documents accessed reflected that ICM team was responsible for:

- **Proactively identifying issues and problems**

- ICM team conducted survey regarding opinion and concerns of different employees about the organizational transformation initiative. The major issues and concerns identified from the personals of IT department are as under:

Table1. *Concerns*

Concerns of IT Personal	Concerns about vendors
IT personals perceived that their role in future business process may be insignificant	Trust on vendors
Perception about their career growth	Doubts about vendor’s expertise and skills
Consider it layoff strategy of top management	Concerns about data and information security
IT expertise skills developed in the past would not be useful	Consider lack of ownership on the part of vendors

To address the issues presented in table 1, the ICM team gave priority to change management, knowledge management and IT governance in addition to business process reengineering and IT outsourcing.

- **Change Management Activities**

- The ICM team arranged awareness seminars and workshops about the transformation need and its importance. The target was that everyone should be aware of transformation initiative. One of the managers said:

We don’t want to create a shock.....everyone should know the major change

- ICM team promoted effective communication among the stakeholders. In this regard the employees were encouraged to share information through emails, intranet, and webinars. One of the managers stressed “*Communication, communication and communication*” is the key. He further said:

Communication is the key and we tried to ensure that everyone should understand the need and benefit of transformation and most importantly the individual and organizational benefits of transformation journey

- **Communicating Issues and Challenges:** In order to build the trust of the employees they arranged sessions between top management and employees. The top management openly discussed the issues, concerns and drawbacks in existing processes and technology. The issues and problems in the current process were communicated through video clips and some media activities and they also shown the benefits of future processes. One of the members of dream team said:

Few minutes of videos clips helped us in understanding the issues in the current processes and potential benefits of future processes as well

- **Recreational Activities:** The ICM team arranged recreational trips with consultants to promote their healthy relationship with employees of this company. The celebrations on achieving milestones of transformation and appreciation from the top management helped a lot in creating healthy working environment in the company.
- **Training and Development:** The ICM team developed a complete training and coaching plan to address the apprehensions of individuals and groups about their career growth and development. One of the managers said:

We discussed the expected change in roles along with training and development plan with the concerned employees ...

The management decided to provide training through line managers, and actively involved them in the process of training. The management was not only interested in providing technical training but also keen to aware individuals and groups about their role in overall business process. The management realized the need of leadership and management training to develop the existing workforce to effectively manage and sustain the transformation process in the organization.

- **Knowledge Management activities**

The management realized the role of knowledge management activities in successfully managing and sustaining transformation process in the organization. The ICM team took various knowledge management initiatives like capturing tacit knowledge of subject matter experts to

standardize processes in the organization. They also provided platform like intranet to store and share tacit as well as explicit information in the organization. The lessons learned from different project activities were stored and shared with different teams in the organization. They promoted the culture of knowledge sharing in the organization. The employees and vendors were encouraged to share valuable information in the organization. The webinars, community of practice, blogs and intranet were developed for this purpose.

Ensure compliance to IT governance

The ICM team considered IT governance as one of the important activities to successfully implement and sustain transformation in the organization. The ICM team ensured to share the details of this initiative with the relevant employees and also provided necessary training in this regard. The training regarding ITIL framework was one of the early initiatives of ICM team in this regard.

Outcome of Transformation initiative

The top management and employees considered this transformation effort successful in achieving transformation goals and objectives. The objectives of cost reduction, process standardization, globalized view and 24/7 support at the global level were achieved successfully. One of the managers shared the outcome of transformation and said:

Our GIP initiative successfully achieved its objectives, I think we successfully achieved what we planned and desired..... more satisfied after transformation..... There were more than 400 reports before transformation and now only 40 after transformation

Similarly another manager said:

The outsourcing of IT services has significantly reduced cost and enhanced performance, we are more satisfied with the IT services..... we are getting support and services without any interruption and delay and having globalized view

The transformation benefits were noted from published reports of IBM, official letters showing some details of achievements of transformation and interviews of the senior management. The following are worth mentioning:

- 50% improvement in terms of cost reduction
- Successfully implemented GIP in more than 100 countries in two years
- Rapid access to reliable data and information
- Procurement staff has greater visibility of current and future materials requirements and it helped to prevent over- or under-stocking.
- Full visibility of its global end-to-end supply chain

- Greater optimization of stock levels and smarter inventory management helped in dramatic reduction in cost
- The materials and recipes now managed centrally to ensure consistent products globally and it helped in reducing cost
- Information available through a single integrated system and it helped in providing updated information in minimum time and helped in effective decision making
- The culture of documenting the lessons learned helped in successfully implementing this initiative in more than 100 countries in minimum time.
- The standardized data and insight into the entire business, managers can make smarter strategic and operational decisions in minimum time

Results/ Discussion

The organization was unable to compete at the global level. It appeared as a big challenge for the top management and further enforced to look for some effective solution. The top management realized the need of transformation due to high operational cost, inconsistencies in work processes and inefficient IT infrastructure and as a result the performance of organization was declined. The management adopted the approach to get their problems and issues identified through consultants appeared as effective part of strategy. Finally, the management decided to introduce major change necessary for the purpose.

The top management chalked out effective strategy about three major aspects such as people, process and technology to address the challenges ahead. The focus of the management was to introduce fundamental changes in work processes and IT infrastructure at the global level. Such change may be referred to as second order change as described in the literature (Levy and Merry, 1986; Rouse, 2005). The social and technical aspects were given due importance throughout the transformation journey of this organization. A balanced approach maintained to deal with social and technical aspects was one of the success factors of this transformation. The steps taken by the management were in accordance with the socio-technical approach that has been suggested by different researchers in implementing ICT enabled transformation in organizations (see Nair et al., 2014; Chen & Nath, 2008).

Keeping in view the socio-technical perspective and its implications the management gave due importance to people, process and technological aspects in a balanced way. The futuristic vision, consistent support, active involvement of top management and encouraging participation of stakeholders appeared to be very influential towards transformation process to be smooth and goals oriented. The findings reflect that futuristic approach of top management to handle the matters of people, process and technology helped in proactively

managing issues and challenges surfaced during the transformation process. The top management put tremendous efforts in understanding the nature and severity of existing issues related to people, process and technology. Consequently, it helped top management in developing effective strategy to lead the transformation project.

The management decision to develop transformation strategy by aligning people, process and technology appeared as a silver bullet to cope with such complex process of organizational transformation. The ICM team effectively communicated future vision and need of transformation through top management. The implementation of the strategy formulated led to the GIP initiative which encompassed PI, PII and PIII which resulted in standardization of work processes, outsourcing of IT services and developing favorable environment for transformation to be successful. The success of such programs may be indebted to top management efforts for promoting effective communication among the stakeholders, participative decision making, awareness about transformational benefits among the employees, collaboration among the teams and top management prime concern and active engagement. It ultimately resulted in getting support and cooperation of employees and realization of transformation benefits.

The issues and challenges explored those were deeply concerned with the organizational transformation initiative were related to employees resistance, employees fear about job security, reservations regarding outsourcing of IT infrastructure and services, challenges of learning new skills to carry out the reengineered tasks and developing trust of employees. In order to handle such issues and challenges the management adopted conscious approach (see Anderson and Anderson, 2001). It was found that conscious transformation approach adopted helped in proactively managing socio-technical issues of transformation intelligently.

The strategy of the top management to provide constant support encouraging participation of the employee, collaboration of HR, IT and business process owner seems to be very effective. Participation of HR, IT in important decisions during important decisions of transformation facilitate whereas ignoring or giving less importance to HR and IT may result in failure of transformation initiatives (Galliers & Leidner, 2007; Roberts, 2014). The participation and collaboration of HR, IT and business process owners during transformation process led to integrating and aligning process, technology and people skills. The findings reflect that participation and collaboration of HR, IT and business process owners during transformation process led to achieving effectiveness as well as efficiency by integrating and aligning process, technology and people skills.

The top management was expecting employee's resistance so they addressed the matter. The proactive strategy of the management leading to change management initiatives at the outset of transformation

initiative helped in reducing resistance and getting maximum cooperation and support from the employees. The findings of this case study support that implementing change management at the outset of transformation initiative appeared to be fruitful and it verifies the past research findings (see Ash & Burn, 2003; Boersma & Kingma, 2005; Roberts 2014; Sheikh et al., 2017).

At the outset of BPR activities the top management encouraged the involvement of stakeholders and communication among them. The effective communication led to establishing good rapport among the stakeholders. The knowledge sharing and knowledge transfer activities with vendors helped in reducing concerns of individuals and groups about outsourcing of IT activities in the organization.

The role of community of practice (COP), blogs and intranet in successfully executing transformation activities has been identified. These tools were effectively used to share valuable information at the global level. The employees from different countries and regions were able to remotely share valuable information and get benefit of each other's experience and knowledge. The effective communication, collaboration and knowledge sharing culture encouraged by the top management resulted in successfully redesigning the existing processes which led to achieving performance goals.

The participation of HR and IT during process standardization activities appeared as one of the futuristic approach to successfully align people, process and technology. The process standardization at the global level was identified as major concern of the top management. The participative and collaborative approach was adopted to address the matter. Consequently, it helped in proactively identifying and addressing issues, concerns and challenges related to people, process and technology. The collaborative efforts to identify change in role, responsibilities, structures and future training needs of individual were found beneficial in implementing and sustaining transformation activities in the organization. The management proactively developed necessary training program for the employees and identified the technical requirements for integration of processes and technology in the organization. The top management may be aware of potential issues and challenges of BPR so they decided to involve HR and IT in designing proactive strategy to resolve technical as well as social problems of this IT enabled change. Furthermore, the coaching and training of employees to address the concerns about their career growth and development has played an effective role. The training (i.e. one way) approach was used to develop the technical skills related to SAP and coaching (two ways) helped to convey them change in their potential roles and responsibilities to be entrusted in future. This dual approach was very effective in developing technical skills and fostering understanding about their future roles and responsibilities and significant change in their perception about transformation. The training related to leadership and management was

also conducted that consequently helped in changing mindset of the people. Such training initiatives developed skills of the participants (employees) for analyzing and solving problems in a proactive manner.

As the organization was operating in different parts of the world the issues and challenges faced in one country were documented and shared with the members of other country. Such practice appeared helpful in avoiding reoccurrence of such problems and issues. The study findings reflect that the top management developed the strategy for unlearning by showing the dark side of the existing processes and communicating the positive aspects of the future processes and technology.

ICT governance was found as an effective enabler in managing implementing and sustaining ICT enabled organizational transformation. The policies developed by ICM team regarding process, people, technology and information communication played an effective role in successfully executing and then managing transformation related activities in the organization. It may be speculated that issues and challenges related to adoption of information technology were proactively managed and minimized due to ICT governance initiative. The adoption of ITIL framework also found to be effective in managing issues with vendors and service providers at the global level.

The findings discussed so far may be summarized as the proactive strategy regarding people, process and technology those appeared to be effective means in transformational journey. Furthermore, the enabling role of change management, knowledge management, business process management and ICT governance also found has been found equally important in organizational transformation. Such means and enablers mentioned above ultimately contributed in managing socio-technical challenges faced by the organization during transformation process.

Conclusion

The main objective of this research was to understand the complex phenomena of ICT enabled organizational transformation from socio-technical perspective. The case study conducted in multinational organization benefitted a lot in developing better understanding about organizational transformation in its true spirit. The people, process and technology were found as potential means of transformation. The proactive strategy concerning such means have paramount importance and it would be priority of the top management at the outset of the organizational transformation initiative. In addition to these “means” the enabling role of change management, knowledge management, ICT governance and business process management has been realized as an essential aspect for successfully implementing and sustaining transformation process in the organization. The participation of HR , IT and business process owners at the outset of transformation initiative

also found valuable in anticipating the issues and problems related to people resistance, process standardization and technology adoption. Top management support, collaboration and effective communication among stakeholders, and more importantly the participative approach of the top management positively contributed in the transformation initiative to be successful.

The rigorous analysis of findings and analysis of this case study led to the following recommendations/guidelines for the top management interested in initiating ICT enabled organizational transformation in their organizations.

- The top management should adopt socio-technical approach for ICT enabled organizational transformation initiative. Equal importance should be given to social as well as technical aspects of the organization.
- The top management needs to develop pro-active strategy regarding people, process and technology. Priority should be given in identifying socio-technical problems. Moreover such issues and challenges identified must be shared with relevant stakeholders in the organization.
- The transformation initiative should be carried out keeping in view the future business needs of the organization. Moreover, it may be driven by needs to be driven by business process owners and not by IT experts alone.
- The top management should adopt holistic approach by considering the overall processes in the organization. The focus should be on end to end business process.
- The change management activities must be initiated and planned at the outset of project.
- The planned efforts must be made regarding transformation awareness in the organization.
- The individual as well as groups must be communicated the benefits of transformation.
- Effective communication among the stakeholders must be ensured.
- The involvement and collaboration of HR, IT and Business process owners must be ensured for developing future plans and activities of transformation.
- Proactively identify the training needs of employees as well as customers.
- Training focus must be on developing technical as well as managerial skills in the employees.
- The important role of knowledge management activities must be realized at the outset of project.
- The management should develop knowledge sharing culture in the organization.

- Top management should develop an environment where individuals and groups share their concerns and ideas openly in the organization.
- Planned efforts must be made in capturing tacit as well as explicit knowledge in the organization from the employees as well as customers.
- Top management support and engagement throughout the transformation journey is critical and efforts must be made in this regard.
- Top management should develop proper feedback and monitoring system to look after and manage the activities of transformation.
- The top management should adopt business process management (BPM) approach to redesign business processes in the organization.
- The importance must be given to ICT governance at the start of such initiatives.
- The management should develop and encourage collaboration and cooperation with the consultants and service providers.

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