

Outsourcing a Business Intelligence (BI) Program

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Abstract

Today ICT systems have evolved into a valuable means of creating, continuing and enhancing business value. As the world economy witnesses increased liberalisation and expansion of global trade, corporate houses are expanding globally and moving their manufacturing bases to cost-effective locations. ICT systems have enabled this transition, increasing the overall competitive factor by integrating far flung supply chains and at the same time enhancing focus on customers. The advent of internet technologies further catalysed these changes.

As a result of this, expenditure on ICT has shot up. Organisations today mandate their CIOs and ICT Directors to develop innovative strategies to drive down costs without compromising on the returns. ICT Outsourcing is one such strategy organizations are adopting to remain competitive and profitable.

Business Intelligence (BI) is a powerful business solution which is universally adopted by organisations to harness their organisation wide data assets into meaningful and actionable business information by applying a standard set of tools, technologies, processes and methodologies. BI initially started off as a tool for providing business information. Today it is an integral part of every industry vertical with its ever increasing sophistication, criticality, functional richness and reach in the organisation. BI applications cater to strategic, tactical and Operational levels of an organisation providing information at near real time with 24x7 availability. Hence, Organisations are under pressure to deliver high quality, timely and actionable information to the right users, at lower operational costs. These translate into key drivers for outsourcing their BI program.

BI outsourcing is executed in a generic 3-phased approach which can be termed as 3T-Model i.e. Transition, Transformation and Transfiguration. People, Process and Technology form the core operational drivers of this model. The key objective is to equip the outsourcing partner with the requisite knowledge to manage the BI program, identify the areas of improvement and define a roadmap for future enhancements and up gradations of technology and process models. There should be a well-defined monitoring mechanism and governance model should be in place for the success of the program. A steering committee should act as pivotal pin in driving the entire program. The scope of this paper is to examine the key drivers for Outsourcing a BI program and touch upon the generic execution models of outsourcing, outline an approach to outsource an entire BI program highlighting the challenges and steps to be taken for the sustenance of this program

Introduction

Environmental, organizational, and technological factors create a highly competitive business environment in which customer is the focal point. Furthermore, these factors can change quickly, and at times in an unpredictable fashion. Therefore, organisations need to react frequently, quickly and effectively to both the challenges and the opportunities resulting from this new ever evolving business environment. Because of the pace of change and the degree of uncertainty in today's competitive business environment organisations are expected to operate under increasing pressures to maximise productivity yet reduce costs.

Reacting to highly competitive global markets, organisations push for adaptation, innovation, and cost reduction while stressing on achieving enhanced customer satisfaction/ retention. Today ICT is at the heart of efforts to promote and achieve these goals. ICT underpins the operations of organisations to integrate far-flung supply chains, and increasingly link their business processes with the customers' needs. It has permeated manufacturing, wholesaling, retailing, and business services. ICT today covers every aspect of the organisation from the personnel department to end-customers. ICT is also a catalyst for fundamental changes in the structure, operations, and management of organizations and supports the business objectives such as: improving productivity, reducing costs, improving decision making, enhancing customer relationships and developing new strategic applications. ICT has evolved from a mere/one-off support function to critical backbone system for business.

With ever increasing global free trade, making the world smaller in terms of market-reach, organisations are moving their manufacturing facilities to cost effective locations. Hence dependency of business on ICT for sustaining and expanding

business in the complex and diverse scenarios has grown enormously. The growth and advancement in internet technologies have further catalysed this change and increased dependency of business on ICT.

As a result ICT costs have witnessed a sharp increase in recent years. Organisations now have to strive to innovate in downsizing the ICT spending at the same time maximising the returns. Outsourcing is today being seen as an effective solution to achieve cost benefits on ICT spending without compromising on the expected benefits.

Evolution of BI as critical business solution

Business Intelligence (BI) is a powerful business solution which leverages the existing organisation wide data assets to produce meaningful and actionable business information by applying a standard and proven set of tools, technologies, processes and methodologies. BI and EPM applications today are aggregating and summarizing large volumes of data residing in various applications across the organisations to provide meaningful dashboards and scorecards which aid the business decision-making process. Organizations are today using these applications to develop efficient strategies for creating sustainable differentiators.

The last 2 decades up to the early nineties saw the implementation of data warehousing and BI applications with data feeding the data warehouse from disparate custom-built legacy systems. BI tools were principally used as static reporting tools. They were considered to be marginal technologies catering to senior management as decision-support systems. They were expensive and considered niche products. The late 90's saw the emergence of the term 'Business Intelligence'. Since then BI has become a business solution which enables organisations to gather, cleanse, integrate, store and distribute vital business information.

With successful implementations of Operational Data Stores (ODS), Data Marts (DM) and Data warehouses across the organisation, demand and usage of business information from these applications grew, leading to the development of tools and technologies for building:

- Dashboards,
- Scorecards
- Advanced Data visualization applications
- Problem specific mathematical models and analytics

BI applications today cater to the information needs at three distinct levels in an organisation:

- Operational
- Tactical
- Strategic

With an increasing need to narrow the gap between strategizing and implementation there is a growing demand for BI applications to provide information in near real time. ***BI usage in Logistics department of Retail business is an example of critical systems requiring 24x7 availability.***

Key Drivers for Outsourcing BI Programs

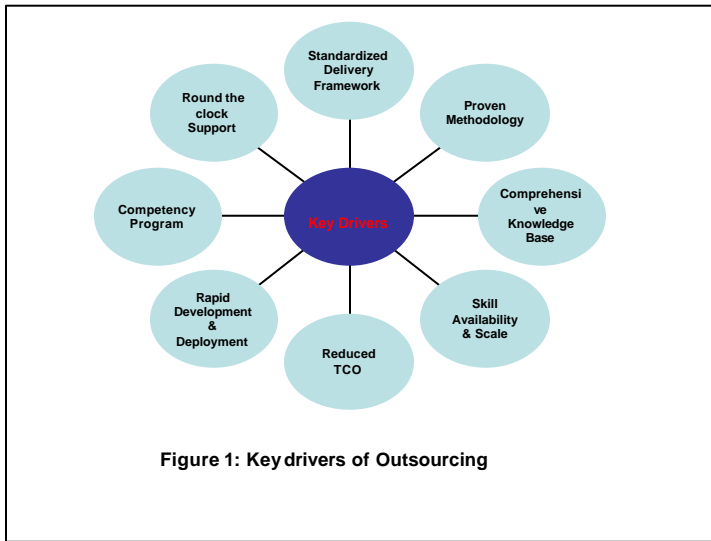
With the evolution of BI as a business critical application, business users started demanding a 24x7 availability of these applications. Applications have to operate under stringent service level agreements (SLAs) to:

- Provide high quality of data at lower operating costs ;
- fulfil complex business demands;
- within minimum possible response time

Apart from the above demands and expectations from business, ICT teams also have to address the following challenges:

- Increasing and varying business requirements due to market environment, reorganisations etc.
- Lack of consensus on organisation wide standards and guidelines
- High total cost of ownership, lack of availability and skills
- Lack of agility to adapt to the changing business needs
- Increase time to market thereby losing the competitive edge

All these can be translated into key drivers for outsourcing as mentioned in figure 1.



BI Outsourcing Models

Organisations are initially hesitant to outsource their BI applications because of the critical and sensitive nature of the data. The complexity of these applications which span out across different geographies can prove to be a deterrent factor for outsourcing. There are diverse generic execution models which the customer organisation can choose from, when realising their outsourcing program.

THE TCS "GLOBAL NETWORK DELIVERY MODEL"

The Network Delivery Model offers a full range of servicing profiles: from task-specific partnership to "factory"-like scale.

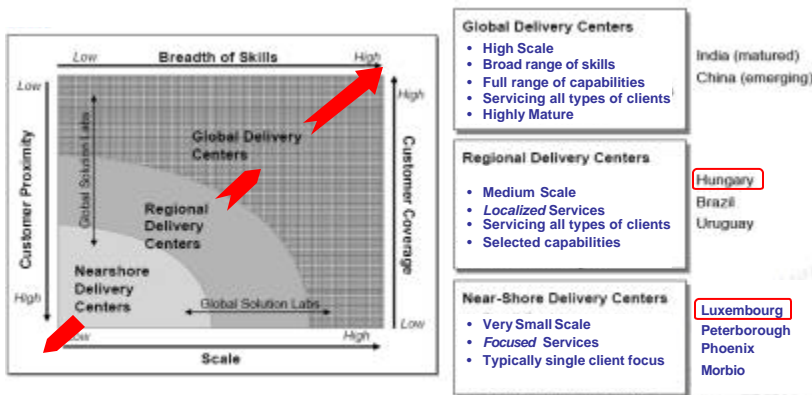


Figure 2 : TCS GLOBAL NETWORK DELIVERY MODEL

TATA CONSULTANCY SERVICES

TCS is successfully managing various outsourced BI programs with its Global network delivery models.

Adjacent figure 2 depicts the various models to be chosen depending upon the scenario which fits to a given BI program.

BI Outsourcing Approach – 3T Model.

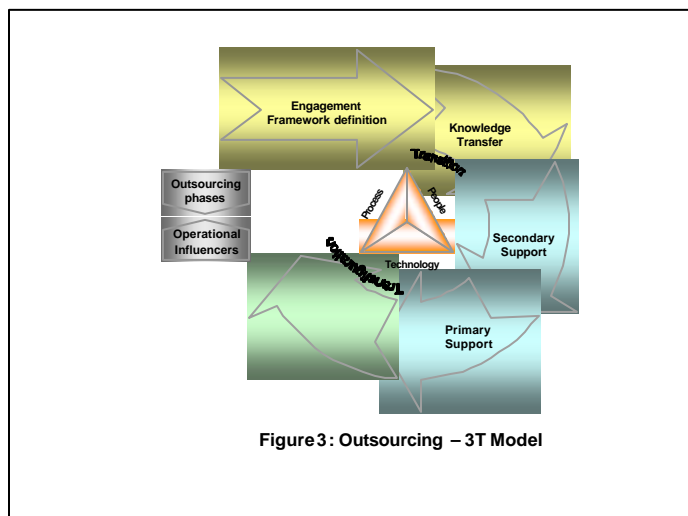
The process of Outsourcing BI programs can be broadly explained as a 3-stage process which we depict in a ‘3-T Model’ described in Figure 3. The 3-T model constitutes 3 distinct stages in the BI outsourcing process which are: Transition, Transformation and Transfiguration. People, Process and Technology form the core operational drivers of the 3-T model. This model is derived from the TCS proprietary BIDS™ Methodology which is being followed in all its BI outsourcing solutions. BIDS™ leverages the TCS Networking delivery models like Onsite, /Onsite-Offshore, Onsite-nearshore -offshore, etc in implementing the outsourcing solutions. The methodology and approach to outsource multi-geography and multi-business domains will be dealt in a sequel to this paper. The success of the entire BI outsourcing program depends upon how these three factors are addressed.

Approach and Governance model for Outsourcing program:

In any BI program there will be multiple projects/Initiatives which will be at various stages in the project life cycle and will accordingly need a different approach. At a broad level these projects can be classified as follows:

- Steady state projects (will primarily require App. Maintenance & Support)
- In-flight projects (need to identify suitable check points for outsourcing)
- Take off projects (projects which are in the initiated phase and can be most suitable candidates for outsourcing in the initial phases)

Robust and effective governance and monitoring framework is essential for the success of the outsourcing program. At the start of the outsourcing program, a steering committee should be formed which oversees the overall program. This should consist of management representatives from both the outsourcing partner and the customer organisation. This should also constitute an executive sponsor from the customer organisation. A Program manager with a strong BI background should work closely with the steering committee to define the future BI roadmap for the organisation. This roadmap should clearly articulate the vision and high level implementation plan for outsourcing the BI program. Steering committee should form a governance team clear roles and responsibilities to monitor and drive the transition, transformation and Transfiguration phases of the outsourcing program.



Governance team should define and follow clear process framework which will drive the outsourcing program through the different phases of the adopted model (3T model). The various phases in the 3T Model are as follows.

Phase I: Transition

The principal objectives of this phase can be stated as:

- To develop expertise (functional and process) in the applications
- To finalize the standards and procedures for the maintenance phase, including change management
- To evaluate the understanding and demonstrate the capabilities of outsourcing partner.

- To define and fine tune the governance model for the outsourcing program
- To ensure the suitability and validity of the execution model with the envisaged vision and objectives of the BI outsourcing initiative

Step I: Engagement Framework definition:

At the start of the transition phase, the schedule of meetings to be held with the SME's and IT experts is drawn out, based on the transition plan

This foundation step focuses on analyzing the existing BI applications in terms of functional areas they cater to, the technology stack, standards and processes followed for maintenance of these applications and relevant skill sets of the existing team. The emphasis is on capturing the 'AS IS' Business and IT processes of the BI applications. Future roadmap of BI applications should be reviewed and validated by the outsourcing partner if they are already present. If not, the outsourcing partner will have to be identified during this step. The Operational influencers and the key deliverables of this phase are described in the figure 4 and figure 5.

Step II: Knowledge Transition:

The objective of this phase is to acquire adequate and detailed application-specific knowledge to enable the new team to provide production support and maintenance. This phase will involve the transition of the BI applications, the associated Software and Hardware environments and existing maintenance standards and processes. The outsourcing Steering committee/ governance team should review the understanding of the new team through the following

- Exit tests/mock tests of the outgoing team
- Play back sessions where the incoming team demonstrates their current understanding through presentations workshops etc.
- Review the transition documentation prepared by the new team.

Key deliverables from this step and the operational influencers are as shown in figures 4 and 5 respectively.

Phase II: Transformation:

Step III: Secondary Support

As a first step towards the takeover of the support process, subsequent to the knowledge acquisition, the project team will obtain hands-on experience on the application maintenance processes by working along with the existing team. This step enables the new team to get acquainted with the AS-IS processes and procedures. This step will give the required confidence to all the stake holders about the capability and domain knowledge of the new team as well as effective transition of the knowledge base.

The outsourcing Steering committee/governance team should assess the understanding of the new team based on:

- Feedback from Outgoing consultants
- Evaluation of the deliverables
- Support levels (in the new step-up)
- Number of escalations during this period.

Step IV: Primary Support

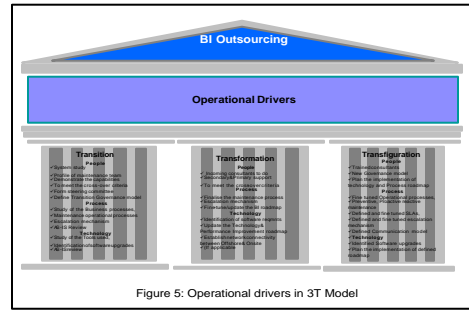
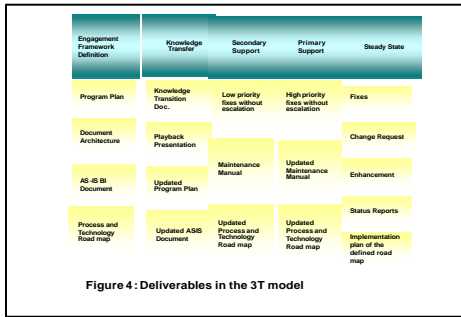
Once the new team meet the 'crossover criteria' in the secondary support, it should step up as the primary support with the outgoing team lending the secondary support. At this stage, the new team should address the service requests directly. The outgoing team should monitor and review the new team's operations. During this phase the recommendations and process improvements suggested by the outgoing team and other stakeholders, should be validated and agreed upon by the incoming team. These inputs coupled with a workshop of all stakeholders should enable the new team to achieve an organisation wide consensus on the future roadmap. The artefacts and the key operational drivers for this step are depicted in figure 4 and figure 5.

Phase III: Transfiguration

Step IV: Steady State

Once the new team passes through Transition and Transformation phases, it transfigures itself into a new SLA based operational environment. These SLAs should be arbitrated between the business, ICT and outsourcing partner at the initiation of this phase. This is the steady state or regular maintenance phase of the BI systems. This phase focuses on the activities and processes required for maintaining the existing BI applications (Fig 4).

A well-defined governance model and clear communication processes are the key operational drivers for the success and continuance of this phase as well as the outsourcing program thereof (Fig 5).



Monitoring and Governance for the Transfiguration Phase:

Once the organisation passes through the phases of transition and transformation, project team transfigures itself into a new SLA-driven operational environment. A well-defined governance model should be put in place with the roles and responsibilities clearly defined and documented for the success and sustenance of this Program. A clear communication mechanism should also be in place.

Communication processes

Frequent/Periodical teleconferencing with the team at Onsite/Nearshore/Offshore should be conducted to monitor new developments and the progress.

- Weekly status reports from the Outsourcing partner to the steering committee.
- Periodical dashboards
- Sharing of all defects and issues found at onsite and offshore.
- Teleconferences and/or videoconferences between the teams to discuss and resolve open issues.
- Regular knowledge sharing sessions via teleconferences and workshops
- Single point of contact at onsite/nearshore/offshore.

Monthly steering committee meetings should be conducted to evaluate the progress and discuss new engagements in the BI Program.

Key Considerations in Outsourcing BI Programs.

Any model or solution comes with its own advantages and challenges. The success of the model depends upon how effectively the advantages are maximised and the challenges are addressed.

Partner Selection Parameters:

Technical, domain and program management competencies of the outsourcing partner are one of the key considerations organizations need to address while choosing their outsourcing partner. It is imperative that the chosen partner has the requisite skills and previous experience to successfully manage such a program to achieve the desired objectives of the outsourcing initiative.

Likewise, if the evaluation of the outsourcing partner is not done in a holistic perspective, taking into account features unique to that particular organisation, the entire program may result in sub-optimal benefits. The outsourcing partner may fail to deliver the goods as envisaged and mutually agreed upon. Hence organisations should evaluate the suitability of their outsourcing partner by considering the following parameters:

- Domain/Business expertise (Functional knowledge)
- Capability to scale up and down the team as per the requirement (flexibility)
- Capability and Maturity of the processes followed (approach, experience and rigor)
- Security assurances (Both physical and data security)
- Commitment by the supplier

These can be evaluated with the certifications the suppliers have achieved like BS779 certifications for Security and CMM for process maturity, client references as well as on the basis of site visits. The success of the program lies predominantly in the selection of the partner according to the unique needs of the organisation and the capabilities of the outsourcing partner.

Security:

A business intelligence (BI) solution across industry verticals, manages business critical data sourced from across the organisation. The prime deterrent for organisations in partnering with an outsourcing partner for maintaining and enhancing the BI solution is concerns on **data security**, especially when outsourcing to an external location. Organisations fear for the security of their critical data leading to erosion of their competitive edge, and rightly so. Security considerations can be classified as Physical, Network and Data. Risk and their mitigation strategies are described as below.

Physical Security (of Offshore Location)

Apprehensions regarding physical security at offshore development centres (ODC) is one of the key deterrents for organisation considering outsourcing. A dedicated offshore development centre, with all possible physical security measures and completely governed by the customer's security standards and policies can be set up. This ensures that security is maintained to the satisfaction of the client. Another option is for organisations to demand that the Outsourcing partner get their offshore locations to be certified by independent international bodies or consortiums, for example like the one that develops security regulations and models like BS779 etc.

Network Security

Another key security concern for the outsourcing organisations is Network security. The outsourcing partner should ensure that the entire network is safe from malicious attacks and network failures. Outsourcing partner should take adequate measures like Data encryption, implementation of comprehensive anti-virus policies for the network security. Comprehensive Back up and Disaster recovery plans should be in place.

Data Security

Organisations expect their outsourcing partners to provide a robust and effective security model which will govern all the development centres (DCs) involved in the outsourcing initiative (Fig 6). Organisations should also insist on a competent authority to conduct a periodic assessment of this model to ensure on-going effectiveness. This would ensure that the work carried out at offshore locations is not only secured with respect to data and software, but also with respect to hardware and general security measures.

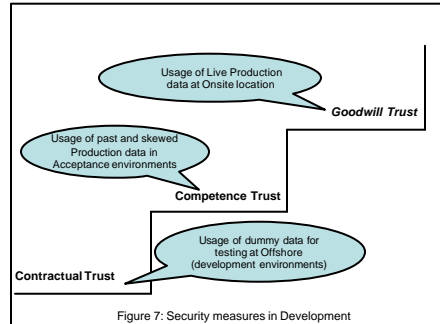
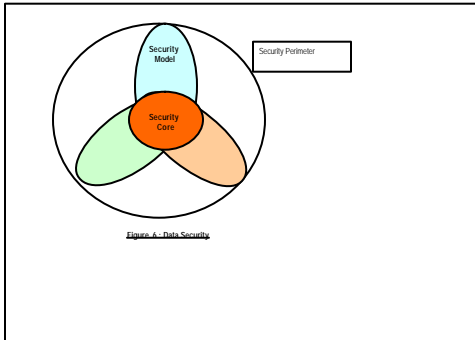
Use of dummy data

Hypothetical data can be used for all development and testing activities before the role out (Refer Fig 7). Once rolled out, the support activities can be moved to the onsite location. This is usually time-consuming and requiring close co-ordination from the organisation and the outsourcing partner to produce real life test data.

Restricted Production access:

Access to the live or production data should be restricted to only a few members in the maintenance and development team.

The above considerations can be used in isolation from each other or together, thus forming a strong security framework.



Organisational, Social/Cultural and Linguistic Considerations:

A global, multi-geography BI implementation and its support may result in diverse cultural challenges and differential reporting requirements while working in different time zones.

Organisational Considerations:

- Geographical location of the outsourcing partner: If the offshore location is prone to frequent civil strife or military escalations, this produces a serious risk for the continuity of the IT services to the business, hence while selecting the offshore locations the political and geographical factors should be suitably studied and organisations should demand a foolproof Disaster Recovery (DR) and Business Continuity plans from the Outsourcing provider.
- **Social/Cultural Considerations**
- Cultural differences (Organisational, social and geographical) between the outsourcing partner and organisation provide a serious deterrent for the success of the outsourcing program.

This should be addressed both by the outsourcing partner and Organisation by :

- Organising workshops which disseminates the information about each other's culture and sensitivities
- Organising training or cultural forums appraising each other's dining, social etiquette etc.
- Encouraging free communication between the both parties, promotion of team-spirit solves more than 95% of these issues.
- Resistance to change: organisation should communicate and be transparent to its employees when starting the process of outsourcing especially when it involves job losses, and changes in roles.
- Business users and employees should be apprised about the outsourcing partner and involvement of foreign consultants (generally the case in case of off shoring). We have even encountered instances of end-users deleting emails from foreign consultants as spam.
- Implementation of Structured SLA approach.
 - When the BI/IT is in-house, consultants are used to working informally with few documented procedures or SLAs. But when outsourcing is introduced there will be a more structured SLA -based approach which may lead to irritation between the outsourcing partner and the employees or business users.
 - Organisation should be transparent and educate the concerned stake-holders on the business processes and the roles and responsibilities towards SLA compliance both by the outsourcing partner and the employees.

Linguistic Considerations

- Language forms another major barrier especially in European countries where the official language of communication is other than English.
- Both Organisation and Outsourcing partner have to address this by training their consultants in the language that has been accepted as the primary means of communication.

Conclusion

Highly competitive global markets, organisations' push for adaptation, innovation, and cost reduction on ICT systems lead to Outsourcing as an effective solution for BI program. The ever increasing demand on BI applications for high quality data at lower operational costs and evolution of BI into a critical business solution has necessitated organisations to outsource their BI programs. The 3T model is a suggested process framework which Organisations can adopt while outsourcing their BI programs. 3T model is derived from TCS' BIDS™ BI program management methodology. 3T Model comprises of Transition (which involves the knowledge transition of the existing systems), Transformation (which involves the initiation and completion of the handover of the BI systems), Transfiguration (which includes achieving the steady state and enabling future growth). The key considerations while outsourcing their BI programs are selecting an appropriate BI partner, Security aspects (Physical, network and data) and organisational, social/cultural and linguistic challenges.

Every model or solution comes with its own risks, the implementation success lies in how effectively the challenges are addressed and the benefits are maximised. Outsourcing BI program can help organisations achieve significant cost savings as well as giving them an inherent flexibility in managing the program coupled with a ready availability of requisite skills. The organisation will achieve an overall reduction in TCO and improved ROI. Despite some challenges, we have seen BI to be a definite candidate for outsourcing. The outsourcing of BI program is a global and proven concept across industry verticals. Organisations which have adopted flexible and applicable process frameworks have benefited enormously from such initiatives. It is important to select the right outsourcing partner where the customer organisation and outsourcing partner need to work closely as one team. The overall approach should be to "Think Big" and transit in steps and subsequently build a steady acceleration in the overall outsourcing. The next paper will present how to outsource and Manage BI programs on a global scale and

Disclaimer

The contents of this paper present the personal views based upon the experience of the authors while executing and managing outsourced BI Program.

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