ABSTRACT
Business-to-business services are becoming increasingly important to compete in a steadily more globalized market. There exist a number of project performance measurement systems. However, even though they represent a good picture of the organization’s main strategy goals, most of these systems are recognized as neither systematic nor automatic. Moreover, often there are too many indicators and most of the time they are not updated and too complex to be understood by the project team. A variety of units are often used, which make it difficult to aggregate and visualize performance for various users at various levels in the company hierarchy. In addition, most of these systems focus on internal performance within the companies.

This paper explores possibilities to develop performance measurement systems that can be used by both the service provider and customer, and which focus on the performance of the service delivery process and the final service product. Furthermore, the paper suggests a conceptual framework for a service measurement system for industrial business-to-business services, and discusses possible strategies and methodologies for measuring service delivery performance, data collection, measurement areas, need for indicators, and practical usage.

KEY WORDS
Industrial Services, Service Transaction, Performance Measurement Systems, Performance Indicators, Performance Goals and Acceptance Criteria, Project Management

1. Introduction
Business-to-business (B2B) industrial services are becoming increasingly important in most of the world as the industry is facing increased competition through globalization and new markets. B2B services can be defined as services exchanged between industrial companies and which are based on specialized knowledge or technology, or a combination of both. Services between industrial companies are becoming increasingly important for their ability to generate revenue, improve competitiveness, to innovate new or improved products and/or services, as well as in establishing and maintaining customer relationships (Panesar and Markeset, 2006). The development of excellent customer relationships entails developing skills for effective communication, continuous interaction with the customer and developing a long-term relationship with the customer spanning the life cycle of the product.

As the industrial service sector grows and services become increasingly important for competition and long term success, we need to better understand how companies ensure quality and competitive performance in service delivery and reception as well as establishing and maintaining customer relationships. Research has shown that industrial services are based on solving a problem for a customer, in order to create value for a customer, and generally to support the customer in achieving the goals (see e.g. Grönroos, 2000). Furthermore, a service provider is interested in creating a relationship with the customer which both the customer and the provider appreciate and value (Kumar et al. 2006). To do this, both parties have to carefully map what each can contribute to the relationship and how to match the service product towards customer needs. The service provider and the service receiver need to develop a strategy for how to deliver the service as well as how to receive it (Markeset, 2003; Markeset and Kumar, 2006). To achieve customer satisfaction the gap between what is delivered and received should be as small as possible (Kumar and Kumar, 2004; Kumar and Markeset, 2007).

Zeithaml and Bitner (2000) assert, “Services are deeds, processes and performances”. Deeds are activities designed to solve problems for customers. Processes are identified approaches used to carry out deeds. Performance relates to service quality and customer satisfaction; i.e. the technical outcome of the service (the quality of the deed, or service content), as well as how well a deed is performed and how it is delivered (process
quality, e.g. service process effectiveness and efficiency). Therefore, both the service provider and the service customer need to have a matching strategy for the transaction process. To increase customer satisfaction, retention, and loyalty, a systematic approach is needed in service strategy development (Kumar, 2005). It is evident that the change in relationship would involve different performance expectations and different indicators to measure performance.

Neely (1999) gives an overview of literature on the needs, types, and development of performance measurement systems (see also Neely et al., 1996; Neely et al., 2000; Kennerley and Neely, 2002). Furthermore, Kaplan and Norton (1992) introduced the balanced scorecard system where they suggest a system for a balanced performance evaluation based on assessment of financial perspective, customer perspective, internal business perspective, as well as innovation and learning perspective (for further discussion see also Rao, 2006).

Most of these performance systems focus on achievements of corporate goals, performance of internal processes and activities, as well as on learning, growth and customer relationships. However, to our knowledge there are few performance measurement systems’ attempts to measure the actual B2B service transaction process with respect to quality of the service content and the quality of the service delivery process. Based on a literature study and discussions with company experts we observed that in the existing performance measurement systems need to be modified to take into account agreed contractual goals. Such a performance systems should focus on the individual service transaction contracts and should be linked to the service provider’s and service receiver’s internal performance measurements systems. The system should be used as a tool for establishing excellent communication, increase transparency, building trust between the parties.

The purpose of this paper is to suggest a basis for developing a performance measurement system for B2B industrial service transaction processes. Based on experience and practices in a supplier of long term oil and gas (O&G) maintenance and modification engineering services, the paper suggests a conceptual framework for developing a performance measurement system for reducing gaps between service delivery and service reception strategies1.

The framework is based on a literature study and discussions with company experts on issues such as needs, usage, users, performance data collection and presentation, establishment of performance goals, acceptance criteria, assessment and follow-up. Furthermore, the study is also based on extensive experience from several ongoing projects involving a range of different companies in the Norwegian oil and gas industry.

2. B2B Services in Norwegian Oil and Gas Industry

In the O&G sector in Norway many of the operators outsource non-core activities such as maintenance and modification of existing production facilities to specialist engineering companies or insource personnel from expert companies to improve performance in peak periods or as a result of lacking specialist competence. This results in a change in the relationships, the type of contracts, performance demands, and level of integration. Furthermore, we observe that Norwegian operators and service providers are becoming more active abroad. In some areas (e.g. production of sub-sea equipment, offshore O&G well drilling services, well completion and maintenance services) Norway is a world-class leader. This creates a need for better performance measurement systems to assess the service transaction process as well as to identify activities, processes, areas which can be improved with respect to management, quality, relationships and competitiveness. Many of the companies on the Norwegian continental shelf are special support companies and work close to the core business of O&G operators using technical products in combination with competence to deliver services such as production facility maintenance and modification, O&G well completion maintenance services, drilling services, etc. The services are often based on advanced technology and specialized knowledge (Panesar and Markeset, 2005).

Many of the contracts are long term, typically of three years’ duration with a possibility for three years’ extension based on performance. For example, the maintenance and modification service contracts involve various sub-activities that are of shorter duration and are started and ended within the contract period. The services

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1 A service delivery strategy can be defined as a generic plan for achieving the service delivery goals. It defines what is to be achieved in terms of services, what is to be delivered, how to deliver them based on considerations of product characteristics, operating environment, operational requirements, customer characteristics and preferences, geographical location, etc. The plan should also define how to measure the service delivery performance. The plan should have a general section for all customers and a specific section for customers with special needs. A service reception strategy can be defined as a generic plan for achieving the service reception goals. The strategy is developed by customers/service receivers and defines how to receive the services provided by the service supplier so as to maximize the value added. The plan should also define how to measure the service reception performance. The plan should have a general section for all suppliers and a specific section for products with special needs (Markeset, 2003).
are delivered continuously over the contract period and can involve engineering solutions to production plant problems, modifications, modernization and up-gradation based on changing needs with respect to technical production capacity, effectiveness and efficiency. It also can involve development or improvement of maintenance and operational programs and work processes. Most of these services are organized as projects and have individual goals and performance criteria with respect to content, delivery, quality, etc.


To become more competitive, it will be essential that the service industry develop competence and skills to improve the performance of activities that support operations. Many of the companies have started to develop performance measurement systems that focus on measuring achievement of internal goals with respect to work processes, activities, development, etc. (Liyanage and Kumar, 2003). However, a performance measurement system needs to be developed which focuses on the service project transaction process. The contractual agreement serves as a basis for the service transaction and a common performance measurement system needs to take into account commonly agreed goals and acceptance criteria for service content, delivery and performance. The service project goals and acceptance criteria furthermore need to be linked to each party’s internal goals and acceptance criteria as defined in the service delivery and reception strategies. Franco and Bourne (2003) list nine factors that affect the managing process through measures:

- Organizational culture
- Management leadership and commitment
- Compensation link to the strategic performance measurement system
- Education and understanding
- Communication and reporting
- Review and update of the strategic performance measurement system
- Data process and IT support
- Business and industry
- Performance measurement system framework

Furthermore, in developing a service performance system some of the questions that need to be considered include:

- What are the challenges and opportunities in the service delivery process?
- What are the influencing factors that affect the service delivery and service reception process?
- Who are the users within the project, within the service provider company and within the service receiver company?
- How can the process be made more effective and efficient?
- How can the performance be measured, evaluated, and balanced?
- What data, information and statistics are available to measure the contribution and importance of services?
- What performance parameters and performance indicators can be used to satisfy both buyers and sellers equally?
- What acceptance criteria should be used to satisfy the customers in the individual contracts?
- How can the acceptance criteria be linked to the contractual agreement?
- How to deal with performance deviation within the contract?
- What kind of bonus/penalty clauses could be built into an industrial service contract?
- How should responsibility and liability be dealt with in industrial service contracts?
- What acceptance criteria should the service provider use internally to improve service production process to become more competitive?
- What acceptance criteria should the service receiver use internally to improve service reception process to create competition between the suppliers?
- How should the performance parameters and indicators be weighted and aggregated to become a basis for key performance indicators?

The first step for each B2B party should be to develop a general service delivery and reception strategy. Based on the general strategy, a customized strategy should be developed and negotiated to fit the service project in question. Furthermore, a set of common performance goals and acceptance criteria for the service project should be developed and agreed upon in the contractual negotiation process to bridge actual performance towards the strategic goals. Thereafter, a set of performance indicators can be defined for the project. As there can be many performance indicators, it may help to define areas that are to be measured. For example, typical areas could be costs, project progress, timely delivery, HSE, service content quality, etc.

The internal company performance goals and acceptance criteria may be different than those used in the project. For example, the service provider may set higher goals internally to improve the service production process and to become more effective, efficient and to improve service quality. If the service provider is delivering the project content to a higher performance standard than the customer expects, the customer should be more satisfied. Furthermore, the service receiver may have lower internal
goals as to the project performance than those which are used in the project, since the performance goals need to be set at a level which fits all service suppliers. If the project performance achievements are higher than what is expected, a new standard is set and the relationship with the service provider is improving.

Furthermore, for a performance measurement system to be effective and efficient, the users and their individual needs should to be mapped. Obviously the project manager will want to measure the service project performance as it progresses. Measurements of interest would include indicators with respect to timely delivery, service content quality, service delivery quality, costs, hours used, health, safety and environment, etc. Project delivery status should be compared to goals. The performance measurements could also be used for benchmarking purposes. Examples of such could include comparing projects (service provider), comparing suppliers (service receiver). As the service content is delivered in parts and packages over time, the performance measurements should be linked to the acceptance criteria which would have to be set at incremental levels increasing over time. There also should be performance measures for individuals and, for example, various disciplines involved in the project.

For such a performance system to be effective and efficient one needs to focus on the data/information collection process. The focus should be on observable quantities, and one should select performance measures that can be automatically collected using existing database systems (e.g. Enterprise resources and planning (ERP) system, project management system, quality statistics system, etc.). Some of the data and information should be common for both the B2B parties, whilst other data and information would be more for internal usage. There also should be appointed a person who is responsible for the data collection and analysis process.

Not all performance factors need to be aggregated to key performance indicators. A careful selection of suitable performance indicators in selected areas, as well as the development of a flexible system for weighting each one, would be crucial to achieve successful usage.

Based on this, a conceptual framework for developing a performance measurements system that measures the service transaction process is suggested (see Figure 1).

![Conceptual Framework for Service Performance Measurement System](image)

**Figure 1:** A Conceptual Framework for Service Performance Measurement System for B2B Service Transaction Processes

### 4. Concluding Remarks

Industrial service performance needs to be measured and evaluated according to contractual agreements and service strategies. Many companies currently have some form of performance measurement systems to evaluate and measure the performances. However, often such systems are focused on measuring internal performance and/or benchmarking. Performance systems that focus on the actual service transaction process and which contains indicators and acceptance criteria that both parties have agreed upon are often missing or are not well developed.

This paper suggests a conceptual framework for developing a performance measurement system for the transaction of services delivered in projects. The framework highlights the need for developing a performance system that takes into account common performance goals and acceptance criteria linked to each B2B partner’s internal goals and acceptance criteria as
defined in their service delivery and reception strategies. The framework is suitable for long-term service projects, but the concept can also be simplified and applied for small service projects as well.

References