

The QUIPUDATA Case: Implementing a Quality Initiative in an IT Organization

Martin Santana-Ormeño

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Martin Santana-Ormeño
ESAN, Peru

Antonio Díaz-Andrade
ESAN, Peru

Jaime Serida-Nishimura
ESAN, Peru

Eddie Morris-Abarca
ESAN, Peru

EXECUTIVE SUMMARY

This case study shows the way in which a subsidiary company of one of the largest corporations in Peru, Backus Corporation, charged with assisting in the use of information and telecommunications technologies, implemented a quality management model, got the ISO 9001: 2000 certification, and evolved from an information technology support center to a center of benefits. It describes the evolution and development of the quality management model based on indicators used in QUIPUDATA and also describes the steps followed to get a quality certification. Moreover, it details some of the technological developments within the corporation, including the information technology tool that supports the management model and the corporate network.

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BACKGROUND

Backus Corporation

In 1876, Jacob Backus and Howard Johnston, two U.S. citizens, established an ice factory in Lima that would become the Backus & Johnston Brewery Limited in 1879. In 1890, this company was sold to an English interest.

Led by Ricardo Bentin Mujica in 1954, a group of Peruvian entrepreneurs bought the Backus & Johnston S.A. Brewery (CBJ) and originated a nationalization by a private initiative that resulted in a widely-held stock company and was followed by the upgrading of corporate facilities and investment diversification. New companies were purchased or created around Peru that would turn the Backus corporate group into one of Peru's leading corporations.

A solid economic group comprised of 19 diversified companies (see Appendix 1), operating in various industrial, agro-industrial and services sectors, the Backus Corporation operates both in Peru and other countries on the subcontinent.

The company's history shows that the business philosophy created by its founders at the middle of the 20th century is still alive and is the backbone of the principles and values put in practice by the Backus founders. Throughout the years, the Backus Corporation has demonstrated a strong commitment with the Peruvian social development, even in the worst economical and political crisis in the country that caused 30,000 deaths during the 1990s because of the terrorist violence.

This philosophy circles around an ongoing concern for personnel development and professional growth.

Inspired by such corporate thinking, the Backus corporation's mission has been defined as follows:

"Our general mission is to cooperate in achieving personal excellence, also called happiness, among all those who work with or are related to the Corporation. Our specific mission is:

- To produce and bring to market goods and services of the best quality, mainly in the foods and beverages industry, both for local and export markets.*
- To satisfy the effective needs of our customers, with an emphasis on the product quality and service that go with them.*
- To create a continued change process that will maintain modern, efficient, profitable and world-class competitive production units.*
- To contribute to national development."*

Thus is characterized the dynamic Backus Corporation, where all components are driven towards better results measured through personnel development, enhanced business capabilities and better returns. A strong corporate commitment to Peruvian development and community solidarity translates into specific initiatives in education, culture, health, ecologic and environmental issues, and sports.

"[The] Backus Corporation counts on leading people with a social and human view of development and is directed at attaining better quality of living for people," says Luis Calderón, Corporate Finance and Systems Manager.

QUIPUDATA

QUIPUDATA is the company charged with providing other units of the Backus Corporation with consultancy services in using information and telecommunications tech-

nologies, optimizing processes and organization, and developing a quality management system based on ISO-9000 and ISO-14000 standards. It also provides services for developing maintenance for computers, data processing, computer systems and for network design, set up and maintenance.

Although founded in 1978, QUIPUDATA started its operations on September 12, 1979, in its headquarters at the district of Miraflores in Lima because it was necessary to create a whole IT capacity: trained personnel, suitable equipment, appropriate facilities, and communications infrastructure, particularly scarce resources during those years in Peru.

QUIPUDATA was founded as a data processing service company for the then Backus and Johnston Brewery. Before the former was created, the brewery outsourced its computer services, but the outsourcer was not experienced as was desired and the brewer's management view about the strategic value of information and supporting technology led to champion and support organizing QUIPUDATA to achieve total corporate independence in this area of key services. Such decision was made to organize an independent company, moving one step ahead in current service outsourcing trends during those years in Peru.

The creation of QUIPUDATA as a subsidiary company of Backus & Johnston Brewery was a unique approach and there were not any other companies following this at that time in Peru. The justification to create it as another company different from the brewery was the top management wanted to avoid conflicts originated by the strong brewery union at that time, regarding the high incomes of information technology professionals. When QUIPUDATA was created, a clear definition of requirements and important investments were made.

QUIPUDATA has an outstanding history of IT management; its actions have evolved along two main guidelines: ongoing technological innovation and quality-oriented management. In 1981, the central computer was bought and the accounting and payroll systems were developed. One year later, QUIPUDATA provided batch data processing services to some subsidiaries and dealerships of the brewery. In 1986, the second central computer was purchased together with the first personal computer.

In 1987, QUIPUDATA took the initiative to organize the Corporate Wide IT Committee to design policies and establish IT project priorities; IT service decentralization started. It was identified two system development platforms, the central computer and networks. Two years later, PC assembly and maintenance business started and the first PC network was set up together with the first IT Technology Strategic Plan. In 1990, QUIPUDATA designed an IT development methodology; simultaneously, the data inputting was transferred to users. In 1991, the central computer was upgraded and electronic mail deployed across the corporation together with the Dealers Marketing System Development (SISCOD).

Although 1992 was an exceptionally difficult year due to the social violence caused by Shining Path in Peru, it marked a milestone in QUIPUDATA's history. Organization and methods services provided for Backus & Johnston Brewery launched the Continuous Total Quality Improvement Program (CTQI), and the optical fiber LAN/WAN network was installed.

A year later, Cervecería San Juan S.A. in Pucallpa (450 kilometers east of Lima) and Cervecería del Norte in Motupe (850 kilometers north of Lima) were provided with satellite connection. Backus & Johnston Brewery acquired Compañía Nacional de Cerveza S.A. in 1994. Three years later QUIPUDATA's information systems were introduced at the latter and its subsidiaries. QUIPUDATA offices moved to the factory located in Callao and the Backus management model was put into practice for the first time in the whole corporation.

In 1998, QUIPUDATA installed a transactional server together with visual environment systems. This year Peru's National IT Association granted the *Best Computer Network Award* to QUIPUDATA. In 1999, the National Industrial Association granted the *National Quality Award* in the Comprehensive Program Category and the National IT Association awarded the *Best Computer Center Prize*.

In 2000, QUIPUDATA was runner-up in the *Business Creativity Award* organized by the Peruvian Science University in the IT track. The Backus Corporation computer systems were introduced at the recently purchased Cervecería del Sur, and, in 2001, they were introduced at Embotelladora Frontera, a soft drink operation in Southern Peru.

SETTING THE STAGE

Ricardo Bentín Mujica, Backus and Johnston's Brewery founder, was persuaded that "*companies that don't change, don't grow, and companies that don't grow, die.*" The Backus Corporation and all of its subsidiaries, including QUIPUDATA, inherited this management philosophy that is now reflected in their "*only through ongoing innovation can we be ahead of the future*" slogan. It was under such premises that a business change process would take place.

An initial step towards introducing formal strategic planning processes for the corporation's businesses and companies took place in 1989. For the first time, the corporation's business model was designed and documented, including the corporate vision, mission, objectives and strategies, together with the statement of the underpinning business values and philosophy.

Since that year, annual strategic planning sessions, called CORBACKUS reunions, gather together corporate management to analyze, with support from specialized consultants, the evolution of business and explore windows of opportunity in new business areas.

In the meantime, QUIPUDATA experienced accelerated growth driven by strong service demand stemming from organizational changes and the corporation's domestic and region-wide growth.

During its life, the organization demonstrated its enhanced efficiency and productivity based on the unceasing standardization of its processes and services, and the disciplined introduction of continuous improvement and innovation in its business operations. Thanks to these characteristics, QUIPUDATA has been able to meet the growing service demand using the same personnel platform. Suffice to say, the number of workstations in the corporate network doubled from 1997 to 2001.

QUIPUDATA is organized around a flat structure that seeks flexible and smooth communication among the various company areas. Appendix 2 shows the company's organizational chart. Although structured as a functional organization, IT projects are executed by multi-disciplinary teams in a matrix organization that often includes its suppliers.

Corporate management is framed by the Annual Management Plan, including:

- Client service supply (Operational Plan);
- Product and services improvement and innovation (Quality Plan); and
- Strategic projects for new capacity generation (Strategic Plan).

The budgeting cycle is initiated in December and January, followed by a formal and exacting process before the Corporation's Executive Committee approves it. Servicing the computer infrastructure, the communication networks and providing for human resources

makes up 65% of the company's budget. Internal audits, performed by the company's management, ensure that the management and budget plans are enforced. It is worth noticing that the corporation's IT budget amounts to 3% of total sales, i.e., the world average for manufacturing companies.

A firm believer in IT decentralization and the need for technological updating, José Martínez, QUIPUDATA's General Manager, says:

"My philosophy about information technology systems pushes for decentralization without loss of control; transfer of knowledge to users is one of our concerns. Also, we are persuaded of the need to create IT infrastructure, not just update it. To me, platform updating is not remarkable, it is just the inevitable consequence of natural evolution."

CASE DESCRIPTION

In 1992, in line with the corporation's strategy to achieve management excellence within each of its companies, the Continuous Total Quality Improvement (CTQI) Program was launched with Holos TQC support, a Peruvian consulting company that originated during the 80s, specializing in quality management.

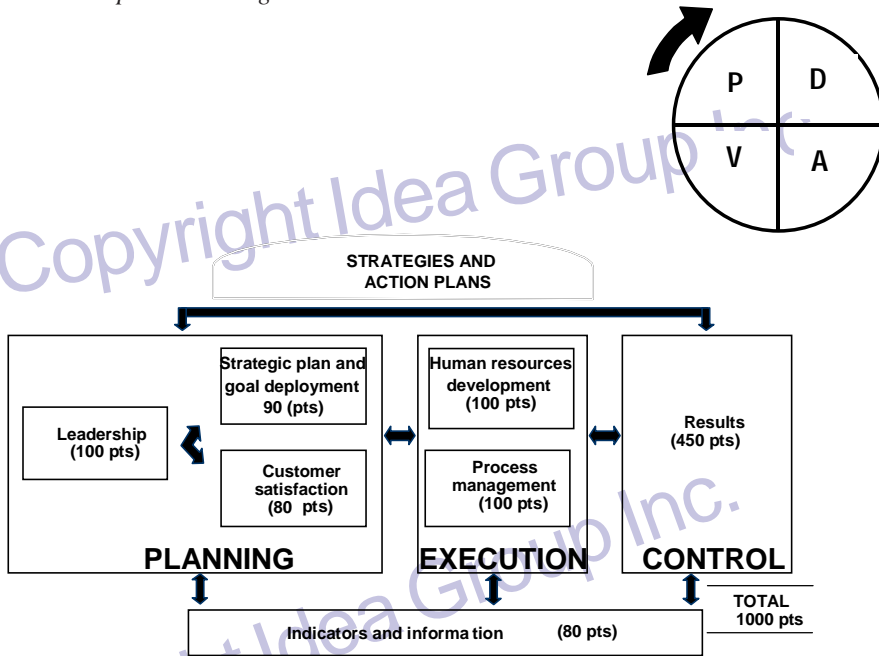
Introducing CTQI was not free from difficulties because of the various Backus Corporation units. QUIPUDATA, who was not oblivious to these difficulties, perceived the total quality process as an exceptional and additional task, on top of their everyday workload.

To overcome this resistance, the following implementation strategy was devised:

- Cascading from a *top-down* approach that would involve lower organizational levels only when the level immediately above them will be totally involved in and committed to the process. In the first sessions of quality policies, the top management had an active participation, including the Board of Trustees of the Backus Corporation.
- This approach sought systematically to overcome resistance to the process and to produce homogeneous and simultaneous progress within all companies, management level offices and divisions from the onset. No laggards would be allowed, regarding that all the companies at the Backus Corporation are vertically and horizontally, highly integrated in the value channel.
- Drivers—the planning, organization and methods, human resources and quality control areas—were assigned a specific improvement plan, together with their CTQI role, operating in harmony to develop the necessary capabilities in the long term.
- Attention was paid to the improvement of the organizational climate through ongoing assessments and the corresponding improvement initiatives.
- Mechanisms for exchange and dissemination, such as competitive field days for workers, a Total Quality Fair, publication of the *Logros (Achievements)* newsletter and the outside dissemination of accomplishments were also put into place.
- Three implementation stages were identified: learning, consolidation and deepening. The learning phase was focused to educate managers and workers on quality concepts and techniques; besides, facilitators were appointed to disseminate the new ideas. Consolidation phase demanded a deeper training in techniques and tools use. In the last phase, a specialized training was provided on specific topics.

A mature CTQI allowed to choose an in-house management program in 1997 based on the criteria for performance excellence inspired by the U.S. *Malcolm Baldrige Quality*

Figure 1. Corporate Management Model



Award. Called the *Backus Management Model*, it was simultaneously introduced throughout the corporation's companies.

Figure 1 shows the model's seven components. The first six describe the requirements to achieve excellence as a "world class"—including best practices—company. The seventh component comprises results in all relevant aspects of business management, i.e., customer satisfaction, market positioning, economic and financial indicators, operational performance, personnel development and motivation, vendor integration, organizational image building, etc. Evaluating these results requires taking a representative period and identifying international benchmarks.

Programs in each of these fronts translate into specific scores awarded through external audits that assess the actions carried out and the corresponding results during the year. The audit's recommendations are included in the following year's management plan, thus enforcing Edward Deming's quality cycle (plan, do, verify and act) to preserve the level achieved and create a mechanism for continuous improvement.

Corporate philosophy was reflected in the management model enthusiastically put into practice using the "visible management" concept. Management, department and section quality committees involved all organizational levels in the unceasing search for excellence. The Senior Backus Corporation Management was always careful to disseminate the management model being enforced by exhibiting it on a diagram that was distributed to all group companies.

The Continuous Total Quality Improvement (CTQI) Program, as designed in 1992, went through a four-year implementation process shown in Chart 1.

Chart 1. *Introducing the Management Model*

	Learning	Consolidation	Deepening
Actions	<ul style="list-style-type: none"> •Educating management and workers on the improvement concepts and techniques •Creating capacities: “facilitators” •Creating mechanisms for dissemination and recognition 	<ul style="list-style-type: none"> •Deeper training: more concepts and techniques/tools •Qualified facilitators 	<ul style="list-style-type: none"> •Specialized training on specific topics
Impact on Business	Low	Intermediate	High
Scope	Departmental	Division/business	Business/business group/corp
Enforced / Activity Program	Improvement project	<ul style="list-style-type: none"> •Improvement projects and cross-functional projects •Assessing customer satisfaction •Organizational climate •Management indicators •COLPA* 	<ul style="list-style-type: none"> •Innovation projects •Quality assurance: ISO-9000 (only the production plants) •Total participation system •New approaches to human resources
Recognition	Newsletter/annual day/fair	Newsletter/annual day/fair	Newsletter/annual day/fair
Investment	Low	Low/intermediate	Intermediate/high
Period	July 92 – December 93	January 94 – December 94	January 95 – December 96

*COLPA is a Spanish acronym of classify, organize, clean, prevent and self-control.

The Continuous Total Quality Improvement (CTQI) was successfully implemented at QUIPUDATA because of the strong organizational culture focused on excellence achievement; nevertheless, it was necessary to overcome some small change resistance. It was a carefully detailed plan to convince everyone about the benefits of the new management model. Later, in 1997, the new Backus management model was adopted at QUIPUDATA and at all the corporation's companies. José Martinez recalls:

“Skepticism reigned at the beginning: our personnel doubted the proposed management model would be effective and had no confidence the results could be achieved. Having a homogenous company helped. We did monthly audits to monitor the project and worked hard to explain all company members the benefits we would achieve from this new management model. I think we made it. We enrolled everybody and gradually people became more and more committed to the process.”

QUIPUDATA thinks the management model not only complies with the corporation's guiding principles but is also a very advanced system that, when enforced, keeps all strings under control. Once the Backus Corporation at large had adopted and accepted the management model and QUIPUDATA, in particular, it became obvious that an IT tool was needed to create the company-wide and corporate facilities required introducing indicator-based management and following up strategies.

In March 2000, QUIPUDATA launched a project to develop software to test the management model by providing follow-up for work-style practices introduced throughout the corporation, and the corresponding achievements. Appendix 3 describes this tool. The

Backus Corporation's QDMonitor system is based on the principle that if results indicators are positive (shown in green), then the company or area's management is under control. Luis Calderón praises the advantages of the QDMonitor system: *"Top management cannot be distracted by operational tasks nor be flooded by data; indicators will tell them about their management performance."*

At QUIPUDATA, the management model acquires a special significance because this organization manages information technologies that are the foundation of innovation. Together with strict enforcement of continuous improvements at all levels, it creates a significant competitive advantage; information technology is the means to facilitate the adoption of better managing practices. Management conducts ongoing investigation to adopt best management practices and technological breakthroughs, while exerting strong leadership in guiding the design and follow-up of business management plans.

Luis Navarrete, the Organization and Methods Manager, forecasts the impact of the main management model components:

"In [the] future, the management model's strengths will gain new meanings because shorter improvement cycles will allow to benefit from capacities created in new business areas, markets or aspects. Additionally, identifying and including best management practices and technological breakthroughs will be faster and all these will contribute to better results and ever higher performance across the company."

QUIPUDATA strictly adheres to the guidelines created by all components of the management model. Some of the most relevant practices are:

1. **Leadership:** Management actively takes part in designing and following up plans for continuous improvement in management quality. It pays special attention to public recognition of outstanding people and projects, and strictly implements the plan for improving the role-played by management. Community outreach initiatives in education (traineeships and grants) and the environment (conserving natural resources) also get attention.
2. **Strategic planning and goal deployment:** Attention is paid to aligning the company's strategy (information technology) with the Backus Corporation's business strategy. A five-year strategic plan resulting from a formal design plan allows to spin-off strategic process under individual managers' responsibility aimed at acquiring new capacities and/or entering new markets. A strict design and control process for the management plan is enforced, while external and internal audits are based on performance indicators discussed in overseeing meetings. The company's goals and plans are deployed and disseminated throughout the company, with the corporate Intranet efficiently contributing to this goal.
3. **Customer satisfaction:** A number of mechanisms have been put in place to capture the clients' requirements in each market segment. The customer satisfaction improvement program (for both internal and outside customers) includes surveys to gauge the quality of services rendered and the subsequent improvement actions. Also available is the customer claim system. Other mechanisms to manage client relations include project management, maintenance requests and service orders.
4. **Human resource development:** A modern personnel management system promotes growth and incentives for workers who are deeply involved in various committees, improvement and innovation projects, and contributes their suggestions, which are

largely put into practice. QUIPUDATA counts on its team of facilitators to provide process support from its internal resources, and it also enforces a program for ongoing organizational climate improvement.

5. **Process management:** Based on indicators, process management has also developed a quality assurance system for customer care processes that seeks to improve the quality and reliability of the company's product and service offerings. Its innovation projects adopt technological breakthroughs while the supply management program incorporates suppliers and improves their contribution to value creation.
6. **Indicators and information:** QDMonitors' management indicator system provides information about the operating status of all company processes and allows control by exception through a graphic warning device. A benchmarking program provides updated information on results indicators and best management practices.
7. **Results:** Chart 2 shows some company-side indicators.

The above indicators stem from the company strategy. Relations among them have been identified over time. As an example of the benefits gained from the Continuous Total Quality Improvement (CTQI) Program, Figure 2 shows the fall of administrative expenses at QUIPUDATA as management quality scoring rose.

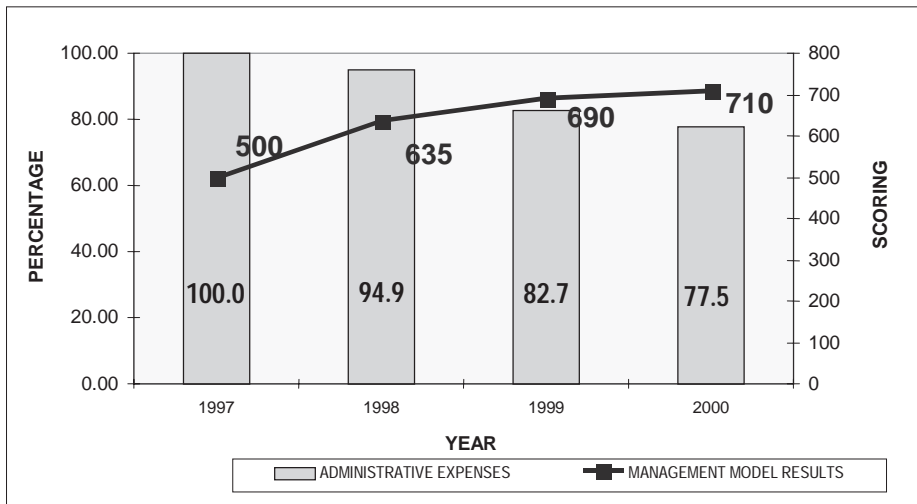
Figure 3 shows some of the improvements achieved at QUIPUDATA in key indicators.

In 2001, after a deep analysis of QUIPUDATA possibilities in the commercial market, its management decided to implement a quality system based on ISO 9001: 2000 to assure quality standards in its processes in order to gain competitiveness in the information technology services market. The goal was to guarantee that administrative processes could satisfy consumer services' levels.

Chart 2. QUIPUDATA Management Indicators

INDICATOR	UNIT
Customers	
External customer satisfaction	%
Claims	Number of claims / 100 users
Market	
Corporate coverage	%
Sales to corporation companies	%
Economic	
Administrative expenditure budget	US\$
Earnings / sales to third parties	%
Operations	
Service - system effectiveness	% backlog
Maintenance backlog	Number of requests
Service interruptions - central computer	%
Service interruptions - servers	%
Corrective maintenance services	% stations served
Personnel	
Organizational climate	%
Hours worked/hours available	%
Turn-over	%
Performance	%
Management role	%
Total expenditures/number of workers	US\$ / workers
Vendors	
Number of vendors	Number of vendors
Purchases from qualified suppliers	%
Vendor service level	%

Figure 2. Expenditures to Management Ratio Scoring



Two phases were defined to implement ISO 9001: 2000 at QUIPUDATA:

- Phase 1: This phase included the processes related to the central computer such as the central computer operation process and the data batch processing. These processes were priorities to take advantage of the chance to serve local companies.
- Phase 2: This phase includes the developing systems processes, user support and those related to audit management of the first phase processes.

To implement the quality system, work teams belonging to the different involved areas in the system were made up. An internal consulting group formed with trained personnel in system quality (lead auditor and facilitators) supported the implementation process. It was developed in the following stages:

1. Diagnosis audit to all QUIPUDATA areas in order to evaluate their level of accomplishment of the ISO 9001: 2000 requirements and identification of those critical points where it was necessary to make improvements.
2. Planning to define the implementation strategy in a detailed work plan. The activities that must be accomplished, their deadlines, and their milestones were stated. Besides, the project organization and the roles of each of its members were defined.

Figure 3. Evolution of Key Indicators

INDICATOR	1997	2000
Customers		
Customer satisfaction	82%	90%
Personnel		
Organizational climate	65%	74%
Financial		
Fall in administrative expenses	100%	82%

ISO 9001: 2000 Implementation at QUIPUDATA

3. In the carrying-out stage, all the personnel involved were trained in ISO 9001:2000 issues. The procedures to be regulated were identified and the requirements to achieve the norm exigency were stated. To avoid delays in the planned work and to correct any trouble, the leader of the project stated meeting sessions to track the progress.
4. Two internal audits and general revision by the directors were performed to verify the project advance and level of accomplishment within the ISO 9001:2000 requirements.
5. To get an independent feedback over the processes to be certificated, an external pre-certification audit was developed.

The final certification audit, carried out by an international acknowledged certifier company, was achieved without any discrepancy. The commitment of the top management with the ISO project and the strong cultural value shared across all the personnel at QUIPUDATA allowed this successful result. Regarding the qualified personnel and the experience gathered along the last years, the ISO certification took only 14 months and demanded just an investment of US\$6,500 including the tracking audits.

The ISO 9001: 2000 implementation at QUIPUDATA allowed, among others, the following benefits:

- Productive and administrative processes efficiency improvements because they were now controlled.
- An improvement procedure was defined thanks to a preventive and corrective actions policy adopted to detect and eliminate the causes of discrepancies.
- Improvement in customers and suppliers relationships.
- Satisfied employees.
- Human resources and purchase processes were finally ordered and controlled.
- The certification could be used as a sale argument.

CURRENT CHALLENGES

Introducing the quality principles and methodologies for QUIPUDATA's processes and services has made continuous improvement possible as shown by the various improvement projects, innovation projects, process scoring, process standardization and use of management indicators.

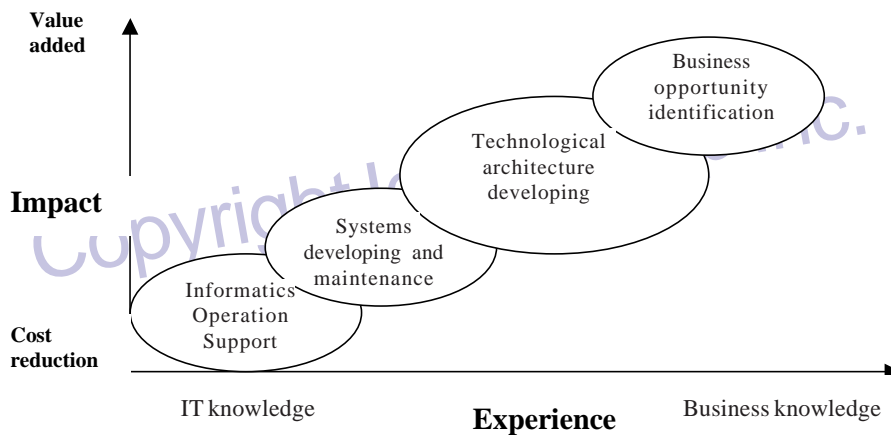
Through the organizational change process, QUIPUDATA has created new competencies among its personnel, developed methodologies and a range of software products while enhancing its main service offerings. All this has opened new opportunities for the future.

Ever since it was organized in 1978, QUIPUDATA was established as a cost center within the Backus Corporation. After building trust through good performance, José Martínez and his management team have devoted themselves to selling their products and services in the local and Latin American markets, hoping that, in the short run, QUIPUDATA will also become another corporate profit center. It has carried on the evolution of an information technology organization as shown in Figure 4.

Luis Calderón says *"bringing QDMonitor to the market is one more Backus Corporation contribution to Peru."* He now sees a new challenge rising for QUIPUDATA:

"I expect to reach three goals for the corporation: no paper, single data record, no cash. I know we can count on QUIPUDATA and I trust that not much time will lapse before we can reach those very ambitious goals."

Figure 4. Evolution of an IT Organization



Adapted from McNurlin and Sprague (1999)

In March 2001, José Martínez pondered all the goals achieved in recent years and the new challenges rising before the company. He had sufficient reason to be satisfied because in only a few years QUIPUDATA had been made over into a highly innovative company.

ACKNOWLEDGEMENT

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BIOGRAPHICAL SKETCH

Martín Santana-Ormeño is an associate professor of information technology at the Escuela de Administración de Negocios para Graduados (ESAN) in Lima, Peru. He holds a PhD in business administration from Florida International University and an MS in information systems from the École des Hautes Études Commerciales in Montreal. His research interests include electronic business, systems development approaches, and conflict management in the development process. He has published in the areas of the use of global applications of information technology, the management of the systems development process, and the consequences of information technology in organizations.

Antonio Díaz-Andrade is an assistant professor of information systems at the Escuela de Administración de Negocios para Graduados (ESAN) in Lima, Peru. He holds an MBA with specialization in Information Systems from ESAN and a BS degree in aeronautical

engineering from Escuela de Ingeniería Aeronáutica, Argentina. His research interests include electronic business, and impact of information technology on economic and social issues.

Jaime Serida-Nishimura is an associate professor of information systems at the Escuela de Administración de Negocios para Graduados (ESAN) in Lima, Peru. He received his PhD in management information systems from the University of Minnesota. His research interests include electronic business, strategic impact of information technology, group support systems, and the adoption and diffusion of information technology in organizations.

Eddie Morris-Abarca is a senior lecturer of information technology at the Escuela de Administración de Negocios para Graduados (ESAN) in Lima, Peru. He holds a BS degree in information systems from Universidad Nacional de Ingeniería (Peru). He is the CEO of InfoPlanning, a local consultant firm specialized in IS planning and business process reengineering. He is currently vice-president of the Peruvian Association for Computing and Information Systems.

APPENDIX 1

Backus Corporation

COMPANIES

Breweries	Unión Cervecerías Peruanas Backus y Johnston S.A.A. Cervecería San Juan S.A.A. Compañía Cervecera del Sur del Perú S.A. Distribuidora San Ignacio S.A.
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Beverages	San Mateo S.A. Embotelladora Frontera S.A. Corporación Boliviana de Bebidas S.A. (Bolivia)
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Containers and Packaging	Industrias del Envase S.A.
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Food	Agro Industrias Backus S.A. Agro Inversiones S.A. (Chile) Agrícola San Juan S.A. Maltería Lima S.A.
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Transportation	Transportes 77 S.A. Naviera Oriente S.A.
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Services	Corporación Backus S.A. Quipudata S.A. Constructores S.A.
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Health	Asociación Civil Asistencia Social Cristal - Médica Nova Salud S.A. EPS
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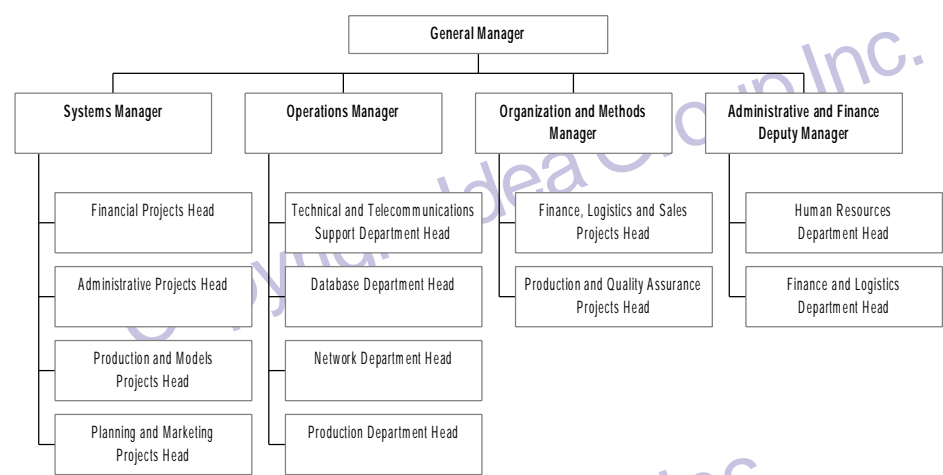
Community Outreach	Fundación Backus Club Sporting Cristal
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RELEVANT FIGURES

Number of companies (2000)	19
Stock capitalization (oct. 2000)	US\$ 910 million
Annual sales (1999)	US\$ 530 million
Taxes paid (1999)	US\$ 350 million
Workers (1999)	8,500 workers
Investment (1996-2000)	US\$ 450 million

APPENDIX 2

QUIPUDATA Organizational Chart



Systems Manager:

- Develops, maintains, and introduces information technology systems
- Evaluates and adopts information technologies to increase user productivity and efficiency

Operations Manager:

- Manages the computer center
- Provides preventive and corrective maintenance for the networks infrastructure
- Manages the database
- Provides communications services

Organization and Methods Manager:

- Provides assistance in corporate organization
- Rationalizes work processes and methods
- Provides support in developing computer systems
- Supports quality assurance based on ISO-9000 and ISO-14000 standards

Administration and Finance Deputy Manager:

Has responsibility over

- Human resources
- Finance and budgets
- Logistics and general services

APPENDIX 3

QDMONITOR

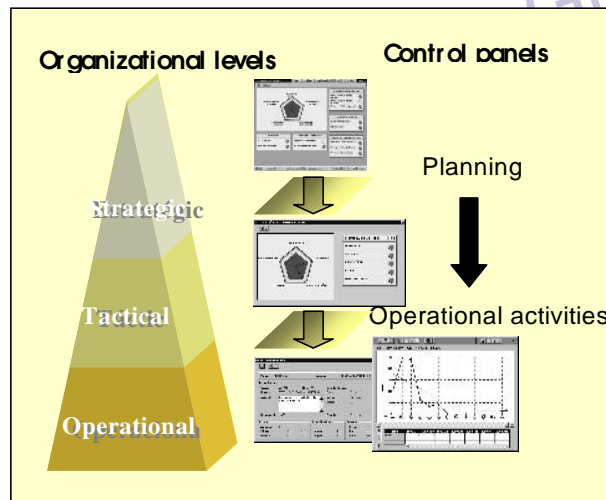
Using the Balanced Scorecard approach, this tool provides a comprehensive view of organizational development based on indicators covering all relevant levels and aspects of the company's management. Moreover, it provides an early warning system to identify deviations from fixed goals by means of a graphic warning mechanism while recording the cause-effect relationships within each performance indicator and their fluctuations over time, thus allowing improvement or innovation organizational initiatives. It can be easily introduced into any management model thanks to its flexibility and smooth operation.

This system allows users to create management assessment, in various aspects and sub-aspects as necessary. For each such component, users must identify representative indicators.

Each indicator is standardized following a guide including eight criteria that are recorded within the system:

1. Mathematical expression.
2. Conceptual expression defining the indicator itself.
3. Proposed objective for indicator measurements.
4. Benchmarks.
5. Accountability, responsible action identified through indicator data.
6. Indicator reading points and measurement tools.
7. Frequency.
8. Information system, data sources.

One of QDMonitor's most relevant aspects is the option to include analytical comments about results actions by the person charged with introducing improvements for those results, and indicator estimates after introducing corrective actions. This feature allows defining action lines and direct efforts.



APPENDIX 4

Corporate Network (Voice, Data and Video)

Communication needs as well as information management among various corporate businesses drove the development of the so-called Backus Corporate Network, fully designed by QUIPUDATA. The network was launched in 1992 to provide telephone and data connections among the Lima breweries. And a later stage, the Motupe and Pucallpa plants were added through satellite linkups. At present, the corporate network provides voice and data communication among all production plants, affiliates and distribution centers in Lima and the provinces, connecting approximately 2,300 PC's and supplying internal telephone communication among the various locations.

Among the services provided by QUIPUDATA to the Backus Corporation through this corporate network is access to various information systems set up in the central computer, as well as local area network applications. Other facilities include electronic mail communication among users, telephone communication among localities and corporation companies through an extension four digit network, data transfer from and to any network station, assistance to all corporate businesses for introducing, servicing and optimizing their IT infrastructure, and finally, Internet access through an independent browsing and electronic e-mail system that provide secure and controlled access to the private network.

Additionally, QUIPUDATA manages and provides centralized support to the voice communications network, centralized management of the data network using remote support tools for users, hardware and software inventory-keeping at the beer factories and distribution centers, mass software distribution and monitoring and preventive identification of failures for critical network equipment.

