# ISO 9000 helps transform public sector in Mexico

**ISO 9000 certifications of Mexican government institutions doubled every two years between 1995 and early 2001 when they totalled more than 700. Yet little was known about the institutional effectiveness of ISO 9000 until the author and researchers centred at the University del Valle de Atemajac (UNIVA) decided to find out.**

BY JOSÉ DE LA CERDA GASTÉLUM

ISO 9000 quality management system (QMS) certifications of Mexican government institutions doubled every two years between 1995 and early 2001, showing an average growth rate of 116 % and reaching a total of more than 700 certified institutions.

QMS implementation seems to go hand-in-hand with the current Mexican transition towards more accountable and efficient public sector institutions. Little was known, however, about the extent to which ISO 9000 is helping, or hindering, public management transformation in Mexico. There are several other important but unanswered questions, for example: how are these systems implemented in practice? What are their main components and processes? How do they fit with traditional bureaucratic organizational structures and cultures? What are the main results of ISO 9000 implementation? Are ISO 9000-based QMS's really improving public sector performance? What are the main benefits of ISO 9000 in government institutions? Is ISO 9000 helping public management development?

## Finding the answers

To provide answers to these questions, the University del Valle de Atemajac (UNIVA)[1], Guadalajara, Mexico, in conjunction with the Government of the State of Jalisco and CONACYT (National Council of Science and Technology) conducted a survey of 711 Mexican government institutions over a period of 14 months during 2000 and 2001. This article reviews the key findings of the research based on the questionnaire responses of 103 government institutions.

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The first task of the team of ten researchers, coordinated by the author, was to identify all Mexican government institutions certified with ISO 9000. Available sources were scarce, and information imprecise. So we consulted directly with government institutions, certification

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bodies, accreditation and regulatory institutions, and other related organizations, in order to build an accurate survey universe.

This consisted of 547 energy sector organizations (77 % of the sample universe), 85 (12 %) representing the economy sector, and a balance of 79 (11%) more broadly distributed institutions. Of all ISO 9000-certified institutions, 91 % were federal government organizations, 7,5% were state institutions, and a combination of federal-state institutions and municipal (county or city) governments represented only 1,5 % (See **Figure 1** for distribution of public sector and government jurisdiction categories in the survey sample, and an illustration of the number of ISO 9000 certifications in government institutions each year from 1995-2000).

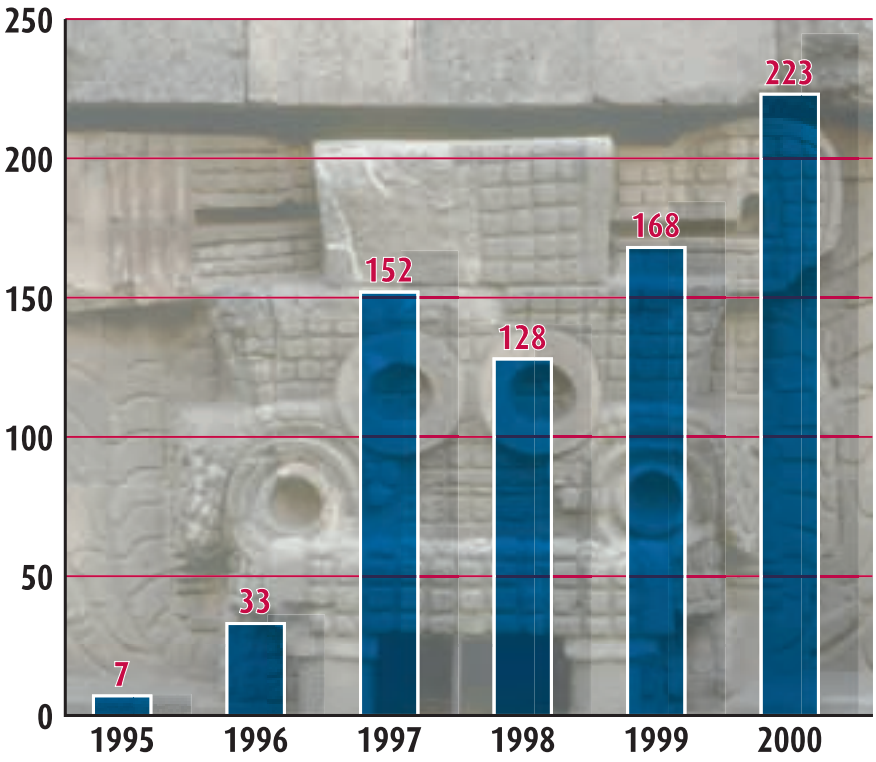


**Figure 1: Distribution and growth in ISO 9000 certifications of Mexican government institutions**

**Sector:**
Energy 77 %, Economy and finance 12 % Others 11 %.

**Government jurisdiction:**
Federal 91 %, State 7,5 %, Federal-State 1 %, City (municipal) 0,5 %.

Three Mexican institutions alone accounted for 89 % of all public sector ISO 9000 certifications: PEMEX, the large public oil company, 45 %; CFE, the public electricity company, 32 %, and the Economic Development Secretariat, SECOFI, 12 %.

## The implementation process

The time taken from the start of ISO 9000 implementation to certification varied greatly among the sampled organizations. However, the average was close to one year. Institutions that completed the process in less time reported more control problems and less continuous improvement following certification than those taking longer.

Six common ISO 9000 implementation process phases were noted:

- *Preparation:* including general information and initial training, visits to other certified related institutions, preparation sessions, and initial budgeting varied from a few weeks to three or more months.
- *Initial structure:* this brief phase, typically one to two months, included task force formation (ISO 9000 committee), formal ISO 9000 training (including internal auditors), nomination of management representative, project design and approval, resource allocation, definition of quality policy and objectives, quality function structure and formal planning.
- *Quality manual:* preparing and distributing the quality manual, initiation of quality function responsibilities, extension of quality training to most members of organization, and some initial process applications took two and a half months on average.
- *Procedures and application of ISO 9000-specific requirements:* preparation and application of quality procedures, deployment of quality functions, specialized quality training for selected personnel (technical and measurement issues), and initiation of continual improvement actions averaged seven months, with a three- to 13-month variance.
- Internal audits: time for QMS evaluation, corrective and preven-

tive actions, and continuous improvement projects averaged four months. There were an average of three internal ISO 9000 implementation audits before certification, although 32 % of certified institutions reported only two, and 23 % only one.

- Final audit: third party evaluation and corrective and preventive actions are the main components of this final phase. Implementation time averages just a month since most organizations are eager to complete the process.

A total of 24 certification bodies have been involved in ISO 9000 certification of public sector institutions. The top five were: CALMECAC (30 %), IMNC (26 %), (SGS 11 %), NORMEX (7 %) and ANCE (6 %). These have official Mexican accreditation and are local organizations except SGS.

Investment in quality system implementation varied considerably, depending on size and type of institution. The average is USD 157 900, including consulting cost (12 %), training (10 %), continuous improvement (19 %), wages for quality function personnel (34 %), internal and third party auditing (14 %), certification cost (9 %), incentives and other issues (3 %).

## Quality training

In theory, most institutions considered training as the most important element of the implementation process. In practice, however, average training hours per employee were less than expected: 45 % of the sampled institutions offered less than 16 hours of quality training during the whole implementation process, 18 % provided from 16 to 30 hours, 15 % from 31 to 60 hours, and only 22 % offered more than 60 hours of training.

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**Rocio Garmendia, Institutional Effectiveness Director, UNIVA** (left), **and Virginia Oviedo, Research Coordinator of Postgraduate Studies at UNIVA, were responsible with José de la Cerda Gastélum for the research design and methodology, and for coordinating the research team.**

**Members of the ISO 9000 research team at UNIVA included** (from left to right)**:**

**Andrea Aguayo, data analyst; Octavio Lopez, data analyst; Herlinda Orozo, secretarial support; Leticia Morales, researcher, and Gisela Sosa, data analyst.**

Following are the most common training topics and percentage of training hours dedicated to each:

- quality awareness (5 %)
- ISO 9000 requirements (26 %)
- quality management and control (11 %)
- quality manual and procedures documentation (14 %)
- internal audits (17 %)
- quality measurement and continuous improvement (15 %)
- other courses on specific applications related to the institution (12 %).

Most training was carried out by internal trainers, and typically represented only 10 % of the cost of the whole implementation process.

## QMS components

The majority of respondents had followed ISO 9000 closely in structuring their systems. ISO 9002 certification had been chosen by 97 % of the sample while only 3 % had selected ISO 9001. Besides 4.4 *Design control*, some other ISO 9000 elements tended to be disregarded, e.g. 56 % missed out on 4.19 *Servicing*, 49 % on 4.7 *Control of customer-supplied product*, 22 % on 4.15.2 *Handling* and 4.15.5 *Preservation*, and 14 % on 4.11 *Control of inspection, measuring and test equipment*.

Campus of the Universidad del Valle de Atemajac (UNIVA), Guadalajara, Mexico.

Systems documentation varied in the quantity of procedures and records, but all institutions followed the documentation structure recommended in the standard quality assurance model, i.e., the quality manual (first level documentation), the general procedures manual (second level documentation), and operative procedures, work instructions and quality records (third level documentation). Most systems were heavily documented. General and operative procedures averaged 117 in number, work instructions 111, and quality records 172.

Most systems were supported by very brief quality policies. A paragraph of four or five lines (less than 50 words) was common practice, with the words "customer" and "customer-citizen" included in 75 % of all such policies. Some other descriptives such as "quality assurance", "quality system", "ISO 9002", "continuous improvement", and "service" were also important elements. All institutions surveyed asked their employees to memorize quality policy.

Quality objectives varied considerably and were usually numerous. However, only 20 % of reported objectives were correctly structured. Most lacked one or two elements such as the specific result expected, the person(s) or departments in charge, or even the main action to be performed. Many institutions reported "serious problems" concerning objectives measurement and follow-up.

The organizational structure set up to implement a QMS was very similar in all institutions. It included a management representative, internal auditors, a quality manager (or coordinator), an ISO 9000 committee (or a quality improvement board), technical assistants, and trainers. Almost all registered institutions hired an external consultant to help with the process.

All systems relied on quality audits and corrective and preventive actions to assure continuous improvement. But most registered institutions applied other improvement strategies together with ISO 9000 such as strategic planning, re-engineering, and quality circles or teams.

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## QMS performance and results

We selected four sources of information to evaluate QMS performance and results: process performance measurements, customer evaluations, employee interviews, and process analysis. The majority of systems (77 %) achieved significant improvements in delivery time, productivity and customer satisfaction, and a reduction in defects and customer complaints. Some systems (10 %) remained "without significant improvement in performance". A few

(5 %) showed "decreased performance" in critical indicators as a result of ISO 9000 implementation. And the performance of the rest (8 %) could not be evaluated due to lack of dependable indicators.

Most (78 %) of the customer perceptions ranked improvements in the selected indicators as "very positive" or "positive", 14 % responded "no change" and only 8 % rated "negative" or "very negative". Also, 91 % of employees rated institutional performance "very positive" as a result of ISO 9000 QMS operation; only 5 % reported "no change" with 4 % "negative".

Finally, analysis of critical QMS components or processes confirmed key improvements in:

- process control
- work organization
- quality awareness among employees
- the work environment
- external image of the institution
- employee training and development.

## Conclusions

Our research findings support the key conclusion: ISO 9000 quality management systems have improved public sector institution performance. Opinions point strongly to ISO 9000 as an effective model to help government institutions meet customer needs better, and comply with regulatory requirements. However, performance improvements were much more evident in manufacturing sector institutions such as the PEMEX oil and CFE electricity companies than in service institutions.

ISO 9000 QMS implementation has also been more successful in organizations with a relatively advanced process control and performance measuring culture, something not commonly found in most government institutions in Mexico.

There were exceptions, however. The fact that a few ISO 9000-certified service organizations demonstrated significant performance improvement indicated that the QMS could help government institutions of any type. But why should some service organizations be better than the rest? The key seems to be leadership. Highly involved managers who care more about meeting citizen's needs than politics or personal advancement make the difference. Government institutions must implement ISO 9000 for the welfare of society, and not to award medals to politicians!

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