K.M. and I.S.O. quality are meant for continual improvement

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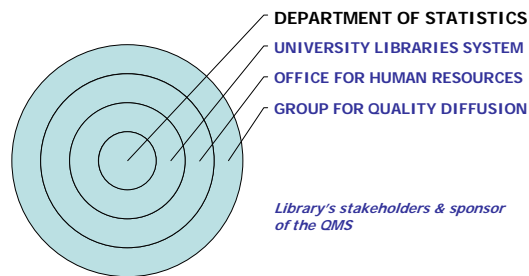| Meeting:	146 Knowledge Management with Statistics and Evaluation (part1 1)
Simultaneous Interpretation:	Yes

Abstract:

 The Library of the Department of Statistics at University of Bologna, is the first Italian University Library to be certified for its Quality Management System according to the International ISO 9001:2000 standards by Det Norske Veritas.

Our Quality System consists of six knowledge-based tools; among them the three most important are: the Annual Survey of Customer Satisfaction delivered to students and junior researchers; The Annual Focus Group recruiting Teachers and Library's Stakeholders to discuss strategic topics; and the set of 22 statistical indicators to evaluate back-office processes to enlighten the Customer's usage, relevance and satisfaction response to specific services.

The ISO Quality Management System is an successful instrument for Knowledge Management in at least two ways: when the librarian describes in documented procedures how the service should be run, he brings into play his personal knowledge. Defining quality objectives, he shares ideas to reach new goals.

DEPARTMENT OF STATISTICS

UNIVERSITY LIBRARIES SYSTEM

OFFICE FOR HUMAN RESOURCES

GROUP FOR QUALITY DIFFUSION

Library's stakeholders & sponsor of the QMS

Before I begin, I would like to thank the our Stakeholders, who also sponsored my participation to the IFLA Conference. The Director of the Department of Statistics, Prof. Tassinari, who encouraged the Library staff to aim toward the certified quality since the very beginning. The University Libraries System and its Board, the President Prof. Cappello and the Coordinator Dr. Bertazzoni, who helped us in sharing our experience with many other colleagues at the University of Bologna. The Office of Human Resources and Dr. Menna, who foresaw in our project an opportunity of organizational improvement; Prof. Rudan the Rector's delegate for the diffusion of the certified quality within the University.

To my colleagues Pina, Katia, Claudia and Donatella goes my personal *grazie* for making the system work and improve daily.

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Sponsored by Dep. Statistics, University Libraries System, Human Resources Office, Group for Quality Diffusion

- Established in 1982
- 31,000 collection
- 1,984 meters open shelves
- 7,89 full time equivalent

- ISO 9001:2000 quality certified since 2004 by Det Norske Veritas

The reading room

2

First a Short sketch of the Library. Established in 1982 as a Departmental Unit, its collection of 31,000 books and statistical sources occupy 1,984 linear meters of open shelves. It was fully renovated in 2000. There are 7.89 full time equivalent staff. Its main users are the researchers and professors of the Department of Statistics and the students from the Faculties of Statistics and Economics.

Our Quality Management System was implemented in 2004 and accredited to ISO 9001 standards by Det Norske Veritas. Since the system is meant to improve constantly, the accredited certification process consists of two stages: the primary certification and the maintenance of the certificate thereafter. Det Norske Veritas has a *knowledge-based* approach to the audit: the so called Risk based Certification® helps the Library to understand where to focus improvement efforts; that's critical to being in control of risk elements that can threaten the Library success; in other words, to minimize the risk that customer expectations are not met.

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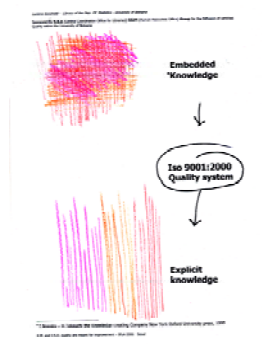
My point is:
- Nonaka & Takeuchi paradigm of K.M. (1995) can be applied to libraries.

From my experience I can say that:
- ISO 9001 the knowledge embedded in the library into explicit knowledge and improves it.

As far as I know, we are the only Italian *University* Library presently certified, although we are pulling together a group of "mutual support" for Italian Iso libraries of any kind[1]. Why is this so? I have heard many colleagues say that instead of improving library services the quality procedures make them stiff. That statistical indicators should always compare your performance with another library. That it's a worthwhile endeavour to use a certification process only if the Institution you belong imposes it. From my experience, I can say ISO quality system turns the *knowledge embedded* in the library into an explicit and tangible form and improves it. My point is that Nonaka &Takeuchi paradigm[2] of knowledge management is fully applicable to a Library system.
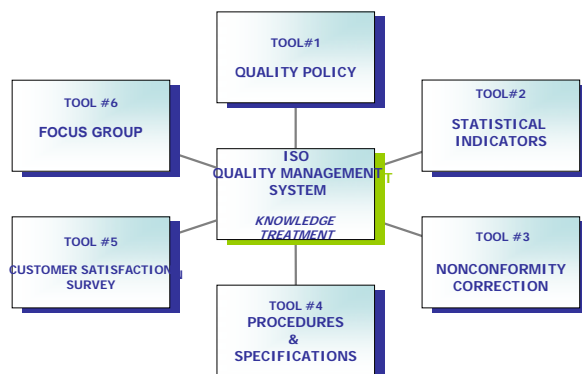
In our QMS we have activated 6 *Knowledge-based tools* such as: the Quality Policy and quality objectives; a set of statistical indicators for monitoring the Library's services; the nonconformity correction; the documented procedures and specifications, to state the service requirements; the customer satisfaction annual survey; and the annual focus group .

- Tool #1

Quality Policy is both Mission and Vision of the library.

The Annual Quality Assessment Meeting

Quality policy is the mainstay of the quality system: it is conceived and improved by the staff members at least once a year. The Director is responsible for it, being both Mission and Vision for the Library. The policy's statement is the outcome of a confrontation among personal opinions, professional attitudes and institutional believes, and it works as a *Knowledge-based tool*. Our main commitments are:

-provide a coherent growth of the Library collections
-guarantee a free access to our documents in any support
-preserve and maintain the historical Italian Statistical Sources collection
-improve professional abilities of the Library's staff
-stimulate a proactive environment where all pertinent information may freely interchange.

The tangible targets that we plan to reach every year, descend from the Quality Policy. By working by objectives, we must translate the Policy overall intentions and directions into

concrete actions: last year, for example, we have planned to create a new help desk where part-time students and librarians may work together to offer better reference service.

Tool #2

SERVICE INDICATOR	SURVEYED SERVICE ASPECT	COLLECTING DATA METHOD	TARGET VALUE	TIMETABLE
Time needed to process materials	Average time between the arrival of an ordered book and its visibility in the library's catalogue	Average days elapsed between the day of the book's arrival and the day of its cataloguing	8 days	Six-monthly

22 statistical indicators:

- 8 focus on back-office processes
- 3 on users specific abilities and habits
- The remaining come from the Annual Customer Satisfaction Survey

We have a set of 22 statistical indicators. six of them monitor back-office processes such as:1) time needed to process materials; 2) number of reminders for overdue loans on the loan's total; 3) correct loan procedure; 4) rapidity of document delivery requested 5) rapidity of document delivery provided; 6) rapidity of the Official Library's suppliers in delivering the book ordered. Three others enlighten user's capacities and behaviours: 7) student's ability to use the online catalogue as a tool of information; 8) average usage of the journals & review section; and 9) average usage of electronic journals.

The remaining items, are taken from the Customer Satisfaction Survey: they tell us a lot about the user's behaviour, expectations, and level of satisfaction regarding many crucial aspects such as: the relevancy and topicality of the statistical sources, journals and books collections, the adequacy of the libraries facilities to the user's needs, and the quality of the human interactions.

As you may notice, our statistical indicators assume *rapidity as a basic asset for quality.* In other word, the quality management system should help us not only to deliver a good service , but also to "save the time of the user". These indicators deepen our knowledge about a more responsible use of time. It's an process of continual improvement that the system requires from both librarians and the Library's suppliers.

Also, these indicators have been tailored on the Library profile; they should monitor the Library's performances and not compare the outcomes with other libraries. On the other hand, the University Library System is responsible for quantitative indicators – with data mostly extracted from the online University databases - whose aim is to compare the libraries performance. These indicators represent the point of view of the University System, while ours attempt to assume the *point of view of the user*.

TIME NEEDED TO PROCESS MATERIALS

- 2003 → 9,7 DAYS

- 2004 → 8,1 DAYS

- 2005 → 4,3 DAYS

Back-office statistical indicator

Data source:
ISO 9001:2000 QUALITY SYSTEM LIBRARY OF THE DEPT. OF STATISTICS 2005

Now, let us consider one of the indicators: time needed to process materials. The service aspect surveyed is the average time between the delivery of an ordered book and its visibility in the Library's catalogue. In three years time, we have constantly improved from 9.7 days to 4.3 days.

Why is this so? We have not modified the process phases (ordering, cataloguing, classifying on the open shelf); also, a colleague left and a new one was hired. My explanation is that we have become *more aware of the role* we play in each process phase. We know that not only accuracy, but also *speed is a service requirement* that our target user cares for.

Tool #3
NONCONFORMITY CORRECTION

- it's important to learn from mistakes
- nonconformity should be managed
- **Quality does not mean flawless.**

When something goes wrong…

As for nonconformity correction – K.M. tool n. 3 – the trick is to treat the nonconformity as an *chance to a deepen understanding* of the Library. It's important to learn from our mistakes and customers disclaims. Each nonconformity should be managed and solved – again - as soon as possible. In other words, quality does not mean being flawless.
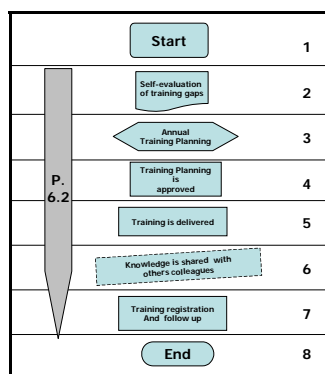
Our knowledge-based approach to nonconformity consists of two steps. Step 1: monitoring and solving recurrent or minor nonconformities. Step 2: discovering, analyzing and solving unpredictable or major ones.

In building the System we have classified many recurrent and minor problems; for each one of them, we have created a *countermeasure* that we may take to remove the problem – as to say - automatically. Otherwise, when a major problem occurs – for example, when a customer complains about a Wi-Fi area's anomaly – the person in charge of the quality service should prepare a written report to *understand* what causes have generated it; find a practical solution with the Library's Staff; and verify after a certain amount of time, if the solution has been fully applied and the problem resolved.

Tool # 4. We have defined 8 documented procedures and 36 specification. The large number of specifications is motivated by the 4.49 Full Time Equivalent of student working part-time for the Library and their frequent turn-over. The written procedure definition is always a collective work, since it should establish responsibility, tasks, inputs and outputs to move from start to finish. The people involved in the process definition *bring their own knowledge*, though remaining owner of the phase or phases they are responsible for.

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Start	1	– TRAINING AND SKILLS DEVELOPMENT PROCEDURE FOR LIBRARY STAFF (P.6. 2)
Self-evaluation of training gaps	2	
Annual Training Planning	3	
Training Planning is approved	4	
Training is delivered	5	
Knowledge is shared with other's colleagues	6	
Training registration And follow up	7	
End	8	

P. 6.2

Here is the Training and skills development Procedure for Library Staff. Again the process starts from *embedded knowledge* and transforms it into a new and enriched form. Step 2 is a self-assessment of trainings gaps. In Step 3, the Annual Training Plan is approved by the Director in Step 4. In Step 5, the training session takes place, and –if necessary - in Step 6, it is shared with other colleagues. The final phase is the registration of the course or class attended and the follow up.

The last item, is probably one of the more difficult and unattained requirements of the ISO Standard: the Organization should be able to evaluate the efficacy of the training on daily work. Sometime after the end of the training event, we fill out a self-evaluation form, with special attention to verifiable application of the training received.

Tool # 5

- It helps to find out what the user's *knowledge* of the library is, in terms of:

- IMPORTANCE
- USAGE OF SERVICES
- SATISFACTION

The Annual Customer Satisfaction Survey

Tools # 5. The Customer Satisfaction Annual Survey is powerful instrument to find out *what the Library users know or don't know about the Library,* in terms of relevance, usage of services and satisfaction. The Survey is delivered after 30 days as a direct interview of students and junior researchers that use the Library. Generally, the interview lasts 10-15 minutes. The Questionnaire is divided in section from A to I. The Satisfaction section is the most detailed consisting of 33 items.

The cultural context of the Department of Statistics makes the interview, data entry and data processing easier. The part-time students do all the work, including data processing.. Last year, we interviewed 137 from an active user population of 409. In the questionnaire different questions were asked of different people. For instance, we asked only junior researchers to declare their satisfaction with the Italian Statistical Sources and the online database; because we already know, from the outcomes of past surveys, that junior students don't really need to use these resources to pass the exams.
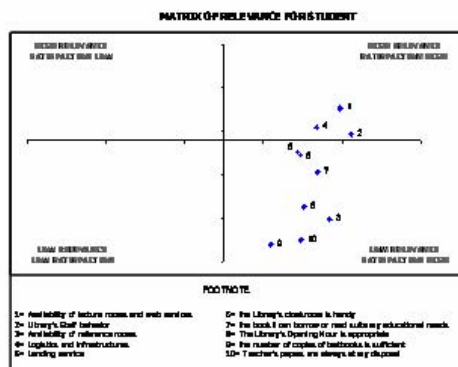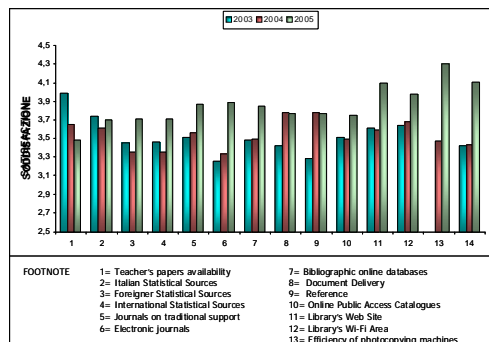

In this matrix of relevance, [3] importance is related with satisfaction. The image of the Library students seen in the picture, is based on three assets: communications skills of the

Personnel, free access to the reading room, and the electronic facilities. These are our winning characteristics that we ought to maintain. The services located in the lower right square – Library's opening hours, the cloakroom, the collection, the lending service, the reference rooms, the quantity of textbooks, the Teacher's papers - are stable and do not deserve a great effort to improve.
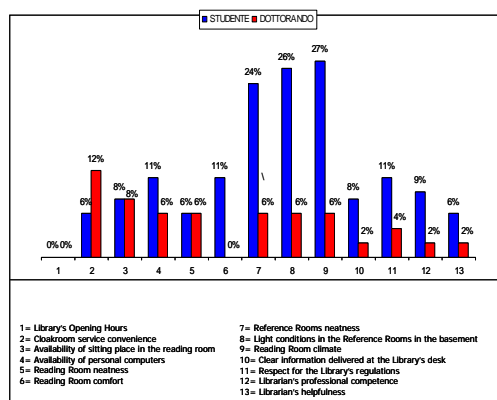
ALMA MATER STUDIORUM
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FOOTNOTE	1= Teacher's papers availability	7= Bibliographic online databases
	2= Italian Statistical Sources	8= Document Delivery
	3= Foreigner Statistical Sources	9= Reference
	4= International Statistical Sources	10= Online Public Access Catalogues
	5= Journals on traditional support	11= Library's Web Site
	6= Electronic journals	12= Library's Wi-Fi Area
		13= Efficiency of photocopying machines

In this three year evolution trend of the service's satisfaction, we notice an overall improvement in 2005: 6, electronic journals, 11 the web site, 13 the efficiency of the photocopying machines have improved a lot. The demand for papers has decreased in the last two years, since they can be downloaded from the teacher's website.

ALMA MATER STUDIORUM
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1= Library's Opening Hours	7= Reference Rooms neatness
2= Cloakroom service convenience	8= Light conditions in the Reference Rooms in the basement
3= Availability of sitting place in the reading room	9= Reading Room climate
4= Availability of personal computers	10= Clear information delivered at the Library's desk
5= Reading Room neatness	11= Respect for the Library's regulations
6= Reading Room comfort	12= Librarian's professional competence
	13= Librarian's helpfulness

The "unknown" response is also very meaningful. Students have a higher percentage of "unknown" then the junior researchers. In items 7,8 and 9, an average 25% have no opinion at all on what's going on at the basement floor of the building, where the statistical sources and journal collections are located.
One student in four, never browsed a statistical journals or had to consult any Italian Statistical Source, at least in the traditional paper format . We cannot remain passive. In

collaboration with the Faculty of Statistics, the Library has planned a 30 hour workshop, worth 5 credits, to be offered to student attending their fourth and fifth year. Students will practice browsing on statistical sources and to download data from the University online resources.

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Students' relationship with the Library

Student of the Faculty of Statistics/The Library	n.	Median	Standard Deviation	Missing Value
A place where to study	73	2,0	1,8	0
A place where I can borrow books	72	4,0	2,1	1
A place for photocopying	72	1,0	1,1	1
A place where to find PC	73	1,0	1,0	0
A meeting place	72	1,0	0,9	1

- **Library is "a place where I can borrow book or other materials"**
  (median 4; Student of Statistics)

- **"it's a place where I can study"**
  (median 3; other Students)
- **"and also find books or work on pc's"**
  (median 2; other Students)

This chart[4] shows a different attitude of an average student toward an unidentified Library. For a student of the Faculty of Statistics, a Library is mainly a place "where I can borrow books or other material " (median 4). Students from other Faculties attend a Library "because it's a place where I can study"(median 3), but, also, " where I can borrow a book or work on PCs".

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- **Female student 25.3 years old**
- **Attending the II or III year**
- **Not "Bolognese"**

- **Most important service "lending"** (4.4)
- **Most used "reading room"** (3.3)
- **Most appreciated one "librarian's helpfulness and competence"** (4)

The Library's regular Customer

- **Overall satisfaction is 5.3** (1-7 scale)
- **The expected Quality is 5.1** (1-7 scale)

All considered, the Library's regular customer is female 25.3 year old, attending second of third year at the Faculty of Statistics; not native in Bologna, she uses the Library as "a place to find books for my studies". Book lending is the most important service, the Library's Reading Room the most used one, while the most appreciated assets are the Librarian's helpfulness and professional competence. The overall satisfaction value is stable in the last three year on 5.3 (scale 1-7) corresponding to "slightly satisfied". While the expectations for quality give a 5.1 (scale 1-7) which can be translated into "slightly above my expectations".

Tool #6

FOCUS GROUP

2003: general Library's service overview

2004: the journal collection evaluation

2005: Library's visibility and promotion strategy

The Annual Focus Group

Tool #6. We introduced the Focus Group as a qualitative technique to understand how to set the questionnaire. From the very beginning, we have chosen to address it only to our main customers: professors and researchers of the Department of Statistics. The focus group is conducted by a Moderator, a Librarian outside the University, in the presence of two observers.

In 2004 we asked for ideas on how to evaluate our journal collections, being the most relevant expenditure in the Library's budget. Many outcomes of the Focus Group lead to concrete actions; for example, we made the decision to benchmark our journals collection with others Italian University Libraries (University of Padua and University of Florence). Focus Groups are a strong instrument of *knowledge management* and particularly effective when applied to a single strategic topic.

TOOL#1
QUALITY POLICY

TOOL #6
FOCUS GROUP

TOOL#2
STATISTICAL INDICATORS

ISO
QUALITY MANAGEMENT SYSTEM

KNOWLEDGE TREATMENT

TOOL #5
CUSTOMER SATISFACTION SURVEY

TOOL #3
NONCONFORMITY CORRECTION

TOOL #4
PROCEDURES & SPECIFICATIONS

In conclusion, our ISO Quality Management System of the Library is based on these six tools. We use them daily, to share, deepen and explore *the territory of knowledge*.

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[1] BIC (*Biblioteche Italiane Certificate* Italian Quality Certified Libraries) is the name of the initiative of "mutual support" for Italian libraries that has built a quality management System. The promoters are: Biblioteca Assemblea

Legislativa Regione Emilia Romagna; Biblioteca Nazionale Centrale Firenze; Biblioteca del Dipartimento di Scienze Statistiche Università di Bologna: Info: biblioteca@stat.unibo.it.

[2] I. Nonaka, H. Takeuchi, the knowledge creating company, New York, Oxford University Press, 1995. The "embedded" knowledge contains cognitive and technical elements; it is the creative potential of each member of an organization; in the embedded knowledge is concealed the potential for innovation. The "explicit " knowledge is formalized and codified, so that easily transferable.

[3] The following three tables have been elaborated by Gloria Di Luigi for her Dissertation Thesis "la valutazione della qualità nella biblioteca del Dipartimento di Scienze Statistiche" Tesi di Laurea nella valutazione della Qualità dei Servizi Università di Bologna Anno Accademico 2004-2005.

[4] This chart comes from another Dissertation Thesis from the Faculty of Economics about our Quality Management System: Anna Lisa De Leva "la customer satisfaction nei servizi universitari: il caso delle biblioteche" tesi di laurea in Statistica Aziendale Università di Bologna Anno Accademico 2004-2005