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***Position Paper –***

**Change our thinking?: Learning about Data and Solutions in Tourism and Hospitality Programs**

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This paper discusses challenges related to learning about tourism statistics and data analysis methods in light of major changes in the availability of data and needs of tourism organizations.

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## **Introduction**

Tourism appears to be an enormous international economic and social phenomenon affecting billions of people. In many instances it is the most important contributor to jobs and development in both developed and developing nations. Because of the importance of the activity, tourism statistics are increasingly used, collected, compiled, estimated and reported by a wide range of organizations.

The expansion of more participants trying to take advantage of this economic force indicates that it is highly competitive and complex. New destinations and attractions are stepping forward to attract visitors; older and existing destinations are developing new approaches to maintain and grow their tourist market; and tourism policies at every level are being developed or refreshed to help create the most attractive and competitive opportunities possible.

The magnitude, distribution and impacts of this contribution have made monitoring and gathering information about the phenomenon a necessary requirement for planning, management and policy development. Improving understanding about the data and the possible applications has also risen in importance. In many discussions the key focus is shifting not only to an emphasis on data but even more to a solutions-based frame.

This translation of data to actionable information and knowledge continues to become more interesting and complex especially as we consider the discussion about “Big Data.” When he was Director of the U.S. Bureau of the Census, Robert Grove wrote in his Director’s blog (May 31, 2011):

*We're entering a world where data will be the cheapest commodity around, simply because the society has created systems that automatically track transactions of all sorts. For example, internet search engines build data sets with every entry, Twitter generates tweet data continuously, traffic cameras digitally count cars, scanners record purchases, RFID's signal the presence of packages and equipment, and internet sites capture and store mouse clicks. Collectively, the society is assembling data on massive amounts of its behaviors. Indeed, if you think of these processes as an ecosystem, it is self-measuring in increasingly broad scope. Indeed, we might label these data as "organic," a now-natural feature of this ecosystem.*

*...For decades, the Census Bureau has created "designed data" in contrast to "organic data." The questions we ask of businesses and households create data with a pre-specified purpose, with a use in mind. Indeed, designed data through surveys and censuses are often created by the users. This means that the ratio of information to data (for those uses) is very high, relative to much organic data. Direct estimates are made from each data item – no need to search for a Shakespearean sonnet within the masses of data.*

*What has changed is that the volume of organic data produced as auxiliary to the Internet and other systems now swamps the volume of designed data. In 2004 the monthly traffic on the internet exceeded 1 exabyte or 1 billion gigabytes. The risk of confusing data with information has grown exponentially. We must collectively figure out the role of organic data in extracting useful information about the society. Hence, developments like "Google Flu," which tries to predict the course of flu epidemics, and the MIT billion prices index, which scrapes price data from internet sales sites to measure price inflation.*

*The challenge... is to discover how to combine designed data with organic data, to produce resources with the most efficient information-to-data ratio. This means we need to learn how surveys and censuses can be designed to incorporate transaction data continuously produced by the internet and other systems in useful ways. Combining data sources to produce new information not contained in any single source is the future. I suspect that the biggest payoff will lie in new combinations of designed data and organic data, not in one type alone.*

*The combination of designed data with organic data is the ticket to the future.*

*(<http://directorsblog.blogs.census.gov/2011/05/>)*

The scale of tourism throughout the world and the growing complexity of travel related designed and organic data suggest a need for improved knowledge, processes and systems and ways to learn about the system. If learning opportunities represent a key concern, then understanding the current environment in which tourism data, statistics, analysis and interpretation are taking place is a relevant issue to explore. This paper outlines a framework

of examples directed at learning opportunities developed for tourism statistics by public and private, academic and non-academic organizations from around the world. It suggests learning opportunities being developed for specialists as well as steps being taken to alert users about uses to assist in management, planning and policy development. Finally, suggestions are made about future learning development necessary to prepare and improve specialist and user data and information utilization.

### **Dealing with knowledge and lack of collaboration**

In a recent meeting with an industry consulting professional we discussed the challenge tied to the changing interests and needs of different organizations with which he works. While organizational data, both internal and external, still must be addressed, a growing focus is also on bridging the “knowledge/information silos” of the organization, which requires organizational and social change. In fact, this is such an important issue in their consulting practice; they are developing professionals in their organization skilled at engagement across the organization and the consulting team.

The issue was given a high profile at the 2004 United Nations World Tourism Executive Council meetings in India where the WTO was discussing the implications of its new status as a specialized agency of the United Nations. One challenge noted at these sessions by WTO representatives was increasing pressure to enhance cooperation among various agencies (OECD and Eurostat being most prominent). The new agency must be more proactive and achieve cooperation with even more organizations and national institutions than ever before. The challenge to promote the field of tourism statistics---collection, analysis, publishing, consistency, etc.---among many organizations was seen as a newly acquired, high-level responsibility and a very large task. This task has not lessened.

This concern is reinforced in the recent appearance of a report from the OECD. Their press release underscores the issue:

Disruptive shocks to the global economy are likely to become more frequent and cause greater economic and societal hardship, according to a new OECD report. The economic spill-over effect of events like the financial crisis or a potential pandemic will grow due to the increasing interconnectivity of the global economy and speed with which people, goods and data travel, the report says.

**“Future Global Shocks”** analyses five potential major risks in the years ahead: a pandemic, a cyber attack disrupting critical infrastructure, a financial crisis, socio-economic unrest and a geomagnetic storm.

The growing threat of a pandemic was highlighted by the SARS outbreak in 2002, which spread quickly from Hong Kong around the world as travellers caught the virus and then flew home. The increasing number of heavily populated megacities, notably in Asia, exacerbates the risk, particularly in business travel, tourism and migration hubs like Dhaka, Manila and New Delhi.

While large-scale disasters provide a point of reference for government planning, global shocks would have far more dramatic consequences. They will require new approaches that improve international co-operation and co-ordination, the OECD says. Policy makers should:

- Step-up efforts to acquire and share data and a variety of simulation models to better anticipate and assess potential shocks;
- Increase resources allocated to surveillance and monitoring of threats and early warning systems;
- Take an internationally co-ordinated approach that reduces or stops threats before they proliferate worldwide;
- Improve international co-operation and incentives to promote diversity in critical systems;
- Enhance multi-stakeholder partnerships, information sharing, consultations, capacity building stress tests, and drills.

([http://www.oecd.org/department/0,3355,en\\_2649\\_35014780\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/department/0,3355,en_2649_35014780_1_1_1_1_1,00.html), July 31, 2011)

The key suggestion here is that tourism agencies will need to consider several of these big issues---acquire and share data, increase resources to monitor and enhance multi-stakeholder partnerships. Much like the consulting arrangement noted above that developed a new engagement position, it is at least something that will have to be explored as

organizations and leaders look to the future. What training will need to be provided to deal with this new reality on multi-silo data and products?

### **What does the model look like---3X3 of consumers by where programs come from**

Many contemporary discussions about tourism statistics have often focused on the important development of the Tourism Satellite Accounts---introduction, development, improvement and the next generation of the TSA. This work began back in the 1980's and represented a major step forward in being able to understand the contribution of tourism to national and regional economies at a macro level. It also is a very prominent example of "designed" data.

The challenge with much of this activity is that learning opportunities that help develop the necessary expertise to understand standards, collection, estimation, analytical approaches and other key issues tied to both TSA as well as other statistics are still in a development mode.

And there are other issues as well. Perhaps the most important is that one solution does not fit all the needs. There are at least three groups in need of learning opportunities--- statistical agency and tourism statistics professionals, tourism practitioners and related or collaborating professionals and students. For example, some large public agencies include an exceptional group of individuals responsible for a variety of statistical issues in countries throughout the world. Examples of this in North America might include the U.S. Bureau of Economic Analysis and Statistics Canada.. This group of professionals continues to need opportunities to enhance an already strong set of statistical talents. It may take the form of learning more about an application opportunity like the TSA accounts structure or more broadly about tourism if the person is not familiar with that area.

In other situations, professionals working in or with tourism organizations and who have little training in statistics still need to use the information gathered from various surveys

and other data inputs to make decisions about a wide range of management, planning, operations and policy choices.

And finally there is a wide array of students studying business, tourism and hospitality throughout the world who are looking forward to the professional stage and who are in need of opportunities to develop statistical and application knowledge to prepare them for future pursuits.

As can be inferred from the preceding points, much of the work in the field of tourism statistics is fragmented and dispersed in small pockets of activity throughout the world. Statistics of tourism have been developed by national statistical offices, national and regional (provincial, state, and local) tourism administrations, industry associations, market researchers, some academics and research institutes. However, much of this activity is conducted with very limited resources and limited awareness and involvement of industry leaders and decision-makers who could benefit from these statistics.

While we have identified the stakeholders in need of learning opportunities, another component of this must also be the delivery elements and from where they come. The differences between the potential consumers of the information suggest very different programs need to be offered. The following sections outline some examples of these delivery frames.

### **Business statistics courses**

Several studies have been conducted through the 1990's and into the 2000's exploring the status of statistics education in Business schools ((Levine 1992; McKenzie et al. 1997; Parker et al. 1999; Tabatabai and Gamble 1997; Gloeckler 2008). While there is some discussion about different methods employed to explore the issue that might suggest

differences between studies, the papers point out the level of interest and content of the material being covered in these programs.

In a recent article, Haskin and Kriehbiel (2011) examined the teaching of statistics in the top 50 US Business programs. In general, one lecture course in statistics was required and credit hour requirements in this area have declined over the past 20 years. For the large majority of programs, the material covered ranges from descriptive statistics through simple linear regression. “Less than half... require time series forecasting and quality control...” (Haskin and Kriehbiel 2011:7). Many of the schools report they have included more real world applications and projects in their courses over the past several years. This has led to more consideration of “inquiry based learning” where a broader question might be posed to students (“what do you think organization X needs to know from these questions/survey/data?”) and then specific steps are taken to identify questions or issues to be explored plus tools or tests that can be employed to conduct the inquiry.

It is also clear from the survey and summary of the results that there is no mention at all of “organic” data nor learning strategies to consider analysis or ways to bridge the data silos.

It is likely this inquiry focus will continue to evolve as different programs consider what they need to do to move their overall programs into the future. While there are different models being put forward, one of the more interesting efforts is developing in the Business School at Berkeley. In this example the School’s Dean (Lyons 2011 <http://haas.berkeley.edu/strategicplan/deanarticle.pdf>, July 31, 2011) identified a need to “Bend the Path” in the way in which the core learning objectives were being addressed because doing what had always been done was not going to lead to outcomes that would satisfactorily prepare students for dealing with future problems. The framework suggested attempts to improve the manner in which problems are identified, the process in which



employees work together and deal with ambiguity and the effort in getting at solutions. We believe this will influence the approach to understanding statistics and change the traditional approach that has been employed.

### **Literature on Tourism and Hospitality programs**

Using the analysis gathered from Lee & Law (2011), which reviewed the top 100 world leading institutions in Hospitality and Tourism, we identified the top ten institutions for the purpose of this paper. According to Lee & Law (2011), the top ten institutions include: The Hong Kong Polytechnic University, Cornell University, University of Nevada at Las Vegas, Pennsylvania State University, University of Surrey, Virginia Polytechnic Institute and State University, Purdue University, Oklahoma State University, Michigan State University and University of Central Florida. Out of the top ten institutions the majority of courses offered were through the statistics and business departments. Additionally, for the undergraduate departments the opportunities to take a statistics course were limited to either one class or no requirement. The graduate programs often offered at the minimum one quantitative course tailored to hospitality, but the majority of the statistics classes were through the department of business or statistics department. In general, students were rarely required to do more than one or two classes in this area depending on a Master's or Ph.D focus.

### **Tourism and Statistical Agencies**

Several nations around the world were identified to assess the types of tourism institutes and education being offered. These included: Statistics Canada, Austria, Spain, the United States and Australia. The UNWTO Themis Foundation and WTO Tourism Statistics groups were also included in this assessment because of the mandate the organization has been given to

provide coordination and leadership for tourism statistics. The overall evaluation pointed toward general themes that included storytelling, demographics, and economic impacts, although usually having no specific focus on tourism. Additionally, the types of workshops that were offered focused on surveys, sampling, and interpreting data. While it is clear that there are important programs being offered, it is also apparent that future needs and opportunities should include creating a greater emphasis on tourism applications, capacity building and engagement.

### **WTO approach: Doing capacity building**

Earlier in this paper it was noted that in 2004 the World Tourism Organization was tasked with a wide-ranging responsibility for helping coordinate many facets of tourism statistics among organizations throughout the world. At that time, the program that was outlined to be pursued identified a wide range of materials to be covered as well as the responsibility of WTO to assist organizations in dealing with this material. More recently, the WTO's statistical programme general overview outlined a very specific agenda for capacity building in the tourism statistics area. This material read as follows:

26. As mentioned in the Programme of Work of the Department of Statistics and Economic Measurement of Tourism for the period 2004-2005, its overall objective is *"to support the analysis of tourism consumption and the design and implementation of policies developed by different stakeholders in the tourism industry and to ensure that this analysis is based on a sufficient number of credible data associated with tourism activities of visitors and with the industries that produce the goods and services required by them; to improve the standardization of tourism statistics; to promote the avoidance of duplication in the information relating to tourism statistics collected by international organizations; to promote the integration of the system of tourism statistics within the sphere of the UN system of international statistics"*.
27. The overall objective should take concrete form in three types of outcomes:
  - Development of national Systems of Tourism Statistics (STS) and the Tourism Satellite Account (TSA) project;
  - Enhanced capacity of National Tourism Administrations (NTAs) as producers and users of tourism statistics;

- Increased awareness of the need and significance of reliable quantitative analyses of the economic impacts of tourism and, specifically, of the relevance of the TSA.
28. However, this is the first time that the content of the WTO's statistics programme is being presented in a way that is different from that with which the Executive Council is familiar: the new format identifies the major lines of action in statistical matters (which are the same as those of other sister organizations of the UN system) and the corresponding projects.
29. The following outline gives a general overview of the WTO's statistical programme:

#### **I. Setting and promotion of international standards**

1. Keeping relevant the present conceptual framework of tourism statistics
2. Promoting worldwide implementation of international standards in tourism statistics
3. Adapting the Tourism Satellite Account (TSA) Conceptual Framework from a Regional Perspective
4. Developing a technical assistance programme for the implementation of the Tourism Satellite Account (TSA)

#### **II. Participation in the revision of other related international standards**

5. Economic classifications of activities (ISIC) and products (CPC)
6. International trade in services: new compilation guidance for the "travel" item in the Balance of Payments.
7. Revision of System of National Accounts and Balance of Payments.

#### **III. Securing international comparability of tourism statistics**

8. Enlarging the scope of international comparability
9. The operationalization of usual environment: general guidelines
10. European inter-regional tourism flows

#### **IV. Design of standardized methodologies for statistical data collection**

11. Model border surveys measuring inbound tourism expenditures
12. Model entry/exit cards for measuring international flows of visitors
13. Collecting data on accommodation establishments using a model software
14. Design of a model "tourism module" for household income/expenditure surveys

#### **V. Collecting and publishing statistics**

15. Statistical Reports
16. Metadata project

#### **VI. Other complementary projects**

17. Tourism macroeconomic indicators
18. New initiatives in short-term statistics: tourism as a case study
19. Foreign direct investment (FDI) in tourism industries
20. Tourism Balance of Payments

30. The Council's attention is drawn to the fact that this list includes "Keeping relevant the present conceptual framework of tourism statistics" (project 1) which we suggested should be postponed until 2006-2007 when the currently ongoing processes for the revision of Economic Classifications (on activities and products), the Balance of Payments and the System of National Accounts (in which WTO is actively participating) should be completed.

In a report that emerged from the UN Economic and Social Council Statistical Commission in February 2011, a series of activities to address this need was outlined. First, a series of regional capacity building programs were identified. The main objective of these programs was the implementation of the International Recommendations on Tourism Statistics 2008 that focused on documentation of data, how to improve present measurement of resident and non-resident visitors and fostering macroeconomic analysis of tourism.

A second step was additional regional workshops in Southeast Asia to train representatives from the national statistical offices, national tourism authorities and central banks in methodological development in tourism statistics and the current country practices in compiling tourism statistics

A third approach used was to institute technical assistance missions using case scenarios---(a) design and enhancement of the national system of tourism accounts and (b) development of an experimental tourism satellite account. These are ongoing activities that seem to be directed at reinforcing the capacity building agenda defined by WTO.

These are important activities and outline a series of learning needs that are quite extensive and will continue to grow. This is especially true if we re-examine the 2004 request that WTO not only deal with the obvious organizations needing tourism statistics but also an extensive array of other organizations that have an emerging interest. The example already cited is the OECD suggestion of more collaboration because of the "shocks" that continue to arise. However, WTO has recently seen changes that appear to raise questions about the ongoing commitment to statistics and by inference, the continuation of the capacity building agenda.

## **Discussion and Conclusion**

The summary of how statistics and tourism statistics are being dealt with in our current learning environment ought to make us pause and carefully consider possible future paths. Certainly thinking about the way in which we should approach learning about tourism statistics and methods may be as complex as the number of organizations engaged and strategies currently being employed across the globe.

If we use only the OECD and UNWTO statements and press releases about need, there is a strong case pointing out the growing importance of tourism data and statistics. At one level, the argument is made that developing directions for management, planning, marketing or policy depend on these data. In a complementary context a case is made that tourism data, both in terms of collection and monitoring, is important because of the need for better collaboration that address the large “shocks” society is and will be facing throughout the world. And then there is the emphasis pursued by UNWTO that deals with both the development of new and improved systems for macro-systems like Tourism Satellite Accounts as well as capacity building to assist countries throughout the world establish these frameworks. If we take into consideration the U.S. Bureau of the Census Director’s comments about the explosion of organic data and the need to consider how to blend the various data inputs, the challenge to traditional “capacity building” efforts is much more daunting.

But the review also points toward changes in thinking about learning. The article summarizing top 50 business schools statistics offerings (Haskin and Krehbiel 2011) points out that over the past 10 years there has been a decrease in the level of statistics being offered in these programs. Now it is possible that this reflects a change in thinking about teaching priorities and outcomes and the need for a greater emphasis on solutions. Haskin and Krehbiel use their own program as an example emphasizing inquiry based learning to

approach statistical learning and application. It is also apparent that various organizations around the world have opted for this option---an emphasis on solutions---as a way to grow their business. IBM and other consulting firms now have terms like “Smart Planet” and “Smart City” as approaches that can be used to address solutions either in specific areas like health care and fiscal management or more broadly across a city infrastructure. It is possible this addresses the issue of dealing with *shocks* in a collaborative data atmosphere, but it still underscores the need to capacity build public and private participants about what is required to make it work especially as it relates to tourism. The question to be explored is how to integrate this into new learning strategies for students and practicing professionals with both substantial and limited statistical backgrounds?

Some academic tourism programs are located in business schools. Therefore some of our discussions about business programs trends apply also to the tourism programs. But it seems slightly more complicated. The single requirement for a statistics or methods class is not unusual for the tourism programs. What is interesting is where they are taught, often outside of the program in statistics or business departments. Our experience in working with some of my colleagues is they discount the ability of students to translate statistical tools and theory into the field of tourism and hospitality. If there is a second course, they often start all over again. Maybe this is a commentary on academic silos, and the prospects of working collaboratively needs additional attention. This is certainly an argument that could be made based on what is happening in public and private firms looking for solutions.

One possible option to consider might be developing special training opportunities for faculty as capacity building activities that have several tiers depending on the background of the participants. This could be driven by organizations like UNWTO or by professional organizations (as examples) to address the developing needs. One example in the U.S. is the training given by Smith Travel Research (STR) in helping hospitality professionals

understand the metrics and benchmarking used in the industry. A person completing this training receives a certification. Should we consider more of this?

Three other issues that we all ought to be thinking about are funding priorities, new learning delivery systems and social network data. Some organizations have a major responsibility for tourism statistics and capacity building. Yet the key issue as these organizations change is the succession process and an overall future of the program without a clear succession and resource plan that addresses an international need across a world platform. In addition, agencies tasked with the responsibility of improving knowledge about both statistics and tourism are engaged in significant discussions about their budgets and what priorities should be pursued in the future. For example, recently the U.S. Bureau of the Census explored the implications of a \$250 million cut in its budget, a cut that might cause them to discontinue several ongoing, major longitudinal studies. And discussions about budget cutting are going on about other federal agencies in the U.S. as well as other parts of the world. Another persistent comment from leaders in various organizations around the U.S. and the world was that the job was crazy because they had fewer staff available to work with. We are talking about raising the bar with regard to knowledge yet it is not obvious that learning and capacity building agenda will survive the changes being noted.

We would be remiss not to mention the importance of “new” learning delivery systems including on-line learning opportunities. It is clear this will be a major way in which information and knowledge will be delivered. It is being done now and it will grow in the future. Given the extensive need for learning a core question is how to develop multi-tiered learning opportunities for all those we’ve identified. Additionally, can it be cooperatively constructed and integrated across the world? This is a challenging question.

Finally, it is difficult to attend a travel or hospitality meeting without a major discussion about social networking approaches and their impacts on all aspects of the

business, be it private or public. New data are being created each day addressing attractions, destinations, experiences, hotels, community environments, etc. While much attention has been dedicated to TSA frameworks, these data developments are probably displacing interest in TSA for many professionals and refocusing their attention on new data forms that change almost daily. An important effort in our learning programs will be to address the analysis and interpretation of these new data forms and how they contribute to solutions.

We have provided information on some of the existing formats currently being employed. But we have also noted some of the important changes underway. There are great challenges in moving the learning agenda forward. But it also represents opportunity to meet a critically important need preparing for short and long-term knowledge needs.

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