

CONFERENCE OF EUROPEAN STATISTICIANS

For discussion and  
recommendations

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Agenda

VALUE OF OFFICIAL STATISTICS – INTERIM REPORT

Note by the Task Force

*The document includes the interim report of the Task Force on the Value of Official Statistics. Section VII provides the first thoughts towards developing a measurement framework and a set of indicators on the value of official statistics. Section VIII of the Interim Report formulates eight recommendations on the way forward in national statistical offices and internationally. The Task Force's plans for further work are presented in paper 16. **The Bureau reviewed the recommendations in the Interim Report (section VIII), advised on further work and suggested issues for discussion at the CES plenary session to seek input from all countries.***

## Contents

I.	Executive Summary .....	3
II.	Introduction.....	5
III.	The current position .....	7
A.	What is value? .....	7
B.	What surveys show about the current position .....	7
C.	Official statistics and decision making.....	9
IV.	Exploiting official statistics' comparative advantage .....	10
V.	Existing practices to measure and promote value.....	12
A.	Current practices in statistical offices.....	12
B.	Practices in other industries.....	15
C.	Comparison of official statistics' and other industries' approaches .....	20
VI.	Building value through partnerships .....	21
A.	Partnerships with stakeholders .....	22
B.	Partnerships through engagement activities .....	23
C.	Partnerships to leverage Big Data .....	23
D.	Crowdsourcing .....	24
E.	An assessment and going forward .....	24
VII.	Towards better measurement of the value of official statistics .....	25
A.	Towards a framework with a set of indicators.....	25
B.	Possible indicators .....	26
VIII.	Recommendations for increasing and communicating the value of official statistics .....	28
Annex 1	Examples of the perceived usefulness of Official Statistics .....	35
Annex 2	Key messages and slogans/banners used by individual NSOs.....	37
Annex 3	Items and topics covered by NSOs' surveys and other monitoring.....	38
Annex 4	Case studies of organizations' in other industries approach to generation and promotion of value .....	40
Annex 5	Partnerships which NSOs have formed or with which they are involved.....	55

## I. Executive summary

1. This is the Interim Report of the Task Force on the Value of Official Statistics. In line with its terms of reference, the Task Force has considered how, in the modern world, National Statistical Offices (NSOs) can best continue to generate added value, and to communicate and promote their role in doing this. This is closely related to the question of how the case for continued and indeed increased investment in official statistics can best be made.

2. Also, in line with its remit, the Task Force has assembled an anthology of good practices. This is important not only to inform and support the discussions and recommendations in the Interim Report but also, in itself, since we can all learn from good practice elsewhere. This pool of information is enriched by recognition that NSOs can learn not only from each other but also from other organizations and industries. Good practices from these sources are also included.

3. **Section II** recounts the background to the setting up of the Task Force and its purpose. As envisaged by the original roadmap, this is an interim report recording progress and findings to date. *It provides draft recommendations for discussion at the Conference of European Statisticians (CES) in April 2016, and at the CES Bureau in preparation of that discussion in February 2016. The Task Force will continue its work based on the guidance and feedback from these fora.*

4. **Section III** discusses the nature of the value added that NSOs are seeking to generate. It notes that genuine value implies products being of use to those that consume them, in particular for purposes of informing evidence based decision making - not only in the public sector but also for informing commercial and household decisions, as well as the academia and social sector. It also notes that changing circumstances means that what is of value also changes. So NSOs need constantly to review and renew what they offer to ensure their adding value is maintained.

5. The section also reviews the current state of official statistics, based on information from a UNECE survey conducted in October 2015. There is much to be pleased about and to celebrate. Use of official statistics is generally growing and trust is in most cases rising, often from already high levels. There are also plenty of concrete examples of where NSOs are supporting and enabling good decision making throughout societies. (Annex 1 records some selective examples.) But the feedback also reveals warning signs. The world is changing rapidly, which means user needs are changing. NSOs need to understand and respond to these. Technologies are also advancing quickly and there are now many information providers beyond official statisticians. *Official statistics therefore emphatically need to avoid complacency and to respond proactively to these challenges.*

6. It concludes by outlining a three part approach: (1) official statistics should be clear about their comparative advantage and promote the value that flows from this; (2) it should aim to lever up performance by adopting best practices to generate and promote value – not only those in other statistical agencies but from other organizations and industries; and (3) exploiting the possibilities more fully of identifying and implementing strategic partnerships with others, including with users and with the commercial sector. The following sections of the Report discuss these strands in more detail.

7. **Section IV** considers further the comparative advantage that official statistics possesses and how better to exploit it. It identifies the United Nations Fundamental Principles of Official Statistics as the cornerstone of what we do. Adherence to these, if properly implemented, should guarantee the quality and reliability of our outputs, in distinction to other information providers. This is a strong comparative advantage which should be promoted more assertively. The section also recommends four other precepts: (1) taking active steps to improve brand recognition of official statistics; (2) focusing decisively on users, rather than production; (3) identifying and

responding in a flexible and agile way to evolving user needs; and (4) greater willingness to adopt new methodologies and technologies quickly.

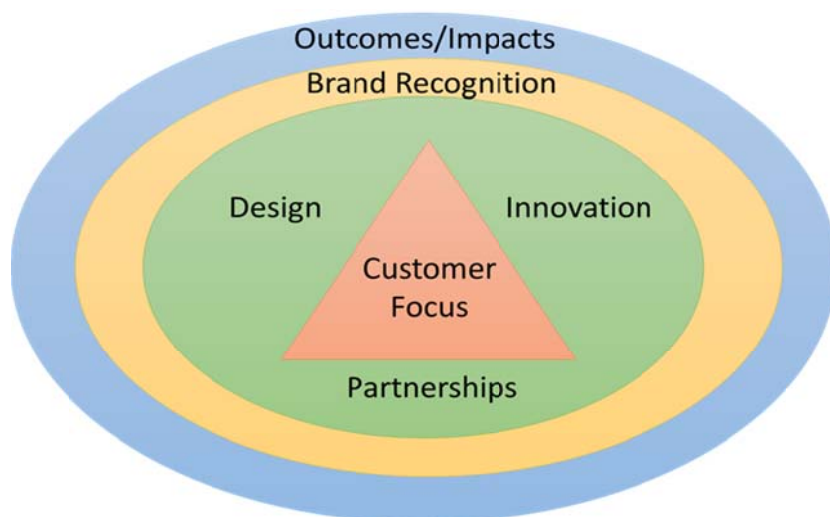
8. *The above approach would be very powerful. But it is an approach more easily stated than to implement. Determined leadership would be a pre-requisite for success.*

9. **Section V** uses the results of a UNECE survey carried out in October 2015 to portray NSOs' current practices in increasing and promoting the value of official statistics and in measuring it. The vast majority of NSOs are active to some extent or other in these fields. Numerous examples are given from individual NSOs which have the potential for adoption elsewhere. Annexes 2 and 3 give some further details.

10. But the section also looks at the practices of a selection of other organizations and industries, which also have the potential for adoption by NSOs. Annex 4 presents 7 case studies drawn from publicly available information. One observation is that the commercial concerns surveyed tend to be more assertive and arguably more imaginative in their approach to promoting their value and brand. A second related observation is the recurrence of some common themes in their approach: (1) customer focus; (2) good design; (3) determined innovation; (4) effective use of well-chosen partnerships; (5) emphasis on brand recognition and development; (6) focus on ultimate economic and social impact.

11. **The analysis of other industries advocates that NSOs should follow an approach which draws upon similar elements. In other words, this paradigm might be:**

- **Begin with a firm focus on the customer/user and his/her needs**
- **Place stress on design of products and services to meet those needs, based on continuing innovation and /or on the fruits of well chosen strategic partners**
- **Invest in brand recognition and promotion so that those well designed and innovative services are well known and trusted**
- **In this way, generate beneficial outcomes and impacts on society...**
- **... which, in turn, are widely recognised as having added value.**
- **Or diagrammatically, as concentric ellipses, rippling outwards:**



12. In view of their evident importance, **Section VI** surveys and discusses the partnerships in which NSOs have set up or are engaged in. Some 57 such partnerships are noted in 25 different

countries. Annex 5 presents details of these. Many of these partnerships seem conspicuously successful and productive. So, again, there is plenty of scope for mutual learning.

13. At the same time, there appear to be areas where the potential for gain has not yet been fully exploited: (1) building of shared production systems and frameworks between NSOs; (2) greater attention in technical assistance to developing countries to a common architecture to avoid wasting green field opportunities by creating new siloed systems; (3) stronger partnerships with other government organizations and private sector bodies to maximise the gains from administrative and other new data sources; and (4) exploiting largely untapped potential for collaboration with the private and commercial sectors, not least in creating new products and information sources that could only be achieved by NSOs and commercial entities working together.

14. *NSOs need to consider, carefully but expeditiously, how to exploit these available gains. Collective effort to identify What works? mechanisms could also pay handsome dividends.*

15. **Section VII** considers how to measure the value of official statistics and identifies three ways to measure it: (1) observable indicators, (2) subjective indicators from surveys and (3) experiments to monetise the value of official statistics. Key themes for observable indicators include the use of statistics, their relevance, transparency and quality. Secondly, the section proposes a limited number of themes for subjective indicators to be collected through user surveys, namely on user satisfaction, user support, design and communication, responsiveness and innovation, brand awareness and specific products and services.

16. *As part of the measurement framework to be developed, the Task Force suggests the establishment of an internationally harmonized minimum set of questions for user surveys. The set of questions could be developed into an online survey tool, and subsequently be used by NSOs.*

17. Finally, **Section VIII** sets out some concrete recommendations relevant to the Interim Report's key findings, as summarised above.

18. *It recognises, however, that in a changing world, a single snapshot would quickly lose relevance. A key recommendation is therefore the setting up of a plug and play platform to give NSOs the ability to record their ongoing implementation of good practices and their experiences in doing so. In turn, this would allow other NSOs to learn from such experiences.*

19. The specific proposal is to establish and maintain an interactive and moderated best practices Wiki. A key feature would be for this to assemble and describe good practices not only from NSOs but also from other relevant organizations and industries. The Wiki would provide concrete examples of how to increase and promote the value of official statistics.

## II. Introduction

20. Official statistics have been a success story over decades. In an information age, the provision of reliable and high quality data and information by national statistical offices (NSOs) around the world has been increasingly important to our economies and societies. But this very success creates a danger of complacency and of failing to recognize the implications of technological and other developments:

- NSOs are by no means the sole or monopoly supplier of information. Indeed, the world is arguably awash with information.
- Tightening budgets and proper public accountability have increased the pressure on NSOs to demonstrate how effectively they use public funds to meet the needs for statistical information.

- Technological advances have powered the Digital and Data Revolutions. These raise legitimate questions about how effectively NSOs are using these new possibilities to expand the benefits they provide to our societies.
- The challenge in front of Big Data, as every day, 2.5 quintillion bytes of data are created – so much that 90% of the data in the world today have been created in the last two years.<sup>1</sup> Correct analysis of the data is the key success factor in being able to make better decisions.<sup>2</sup>
- These same developments are available not just to NSOs but to all. So they often serve to increase the competition to NSOs from other information providers.

21. It is not over-dramatic to conclude that official statistics are at a cross roads. The successes hitherto have not been accidental and have drawn on the inherent strengths that official statistics possess. There is the potential to build on these. However, complacently doing nothing in a changing world would carry the real risk of entering a downward spiral of perceived usefulness in tandem with successively reduced funding. Furthermore, like other industries, official statisticians have both the right and the obligation to make the case for their continuance and expansion, recognizing that we are no longer in the “statistics industry”, but in a much more competitive “information industry”.

22. Under these conditions, the need for international work to define, measure and promote the value of official statistics and its impact on decision making has become ever more pronounced. In April 2014, the Conference of European Statisticians (CES) held a seminar on “What is the value of official statistics and how do we communicate that value?” The Conference stated that the value of official statistics should be promoted as a global asset, and called for cooperation and joint actions at the international level, for example to develop a common language and terminology related to the value of official statistics; and to measure the economic value of official statistics through collection of case studies.

23. To advance this agenda, the CES Bureau asked a group of interested countries and organizations to develop a road map to explore the key aspects to be covered in further work on the value of official statistics. Such a road map was prepared by a group composed of the United Kingdom (chair), Austria, Canada, Mexico, OECD and UNECE. The CES Bureau discussed the road map at its meeting in February 2015.

24. In consequence, the CES Bureau established a Task Force on the Value of Official Statistics in March 2015. The Task Force is composed of experts from the United Kingdom (chair), Mexico (vice chair), Canada, Ireland, New Zealand, Turkey, Eurostat and OECD. UNECE acts as the secretariat. By virtue of its terms of reference, the Task Force is intended to help drive forward this agenda and to answer several strategic questions:

- Based on a clear understanding of the current position, what is the best way or ways forward to improve and progress the perceived value of the business of official statistics?
- What are the best ways to delineate, measure and communicate the value of official statistics?
- Closely related, how is the case for continued investment in official statistics most effectively made?

25. It is also intended to assemble a pool of good practices carried out by individual NSOs to support mutual learning.

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<sup>1</sup> “Apply new analytics tools to reveal new opportunities,” IBM Smarter Planet website, Business Analytics page

[http://www.ibm.com/smarterplanet/us/en/business\\_analytics/article/it\\_business\\_intelligence.html](http://www.ibm.com/smarterplanet/us/en/business_analytics/article/it_business_intelligence.html)

<sup>2</sup> “Performance and Capacity Implications for Big Data”, IBM Redpaper, International Technical Support Organization, [ibm.com/redbooks](http://ibm.com/redbooks)

26. In answering these questions, the Task Force was keen to benefit from existing good practice. The Task Force carried out a survey of NSOs, jointly with the UNECE High-Level Group (HLG) Modernisation Committee on Products and Sources, in October 2015 to collate good and innovative practices which improved the relevance of official statistics, measured their value or persuasively advocated the value of investing in official statistics. Where respondents were happy to have such information shared, this Interim Report reports such examples.

27. Just as importantly, the Task Force looked selectively at how other industries go about the same tasks and the Interim Report also discusses these.

28. The Task Force is also working towards a framework and a set of indicators to measure the value of official statistics, and the initial findings are provided in this report.

29. **The last section provides draft recommendations for discussion at the Bureau in February 2016 and at the Conference in April 2016. The Task Force will continue its work based on the guidance and feedback received at these fora.**

### III. The current position

#### A. What is value?

30. Value is a central but sometimes slippery concept for any business or service. The Oxford English Dictionary defines value as “the importance, worth, or usefulness of something”. It may have a material or monetary dimension: how much could be charged for the particular output or service. But, for a public organization in particular, it is also likely to have a wider component – the value that the organization contributes to society, regardless of whether all of its contribution could or should be charged for.

31. There is also a dynamic element insofar as an output or service is rarely timelessly of intrinsic value. The value depends on changing circumstances and needs. Oil lamps lost value after the advent of gas and then electric lighting, as did steam power when more efficient means of propulsion came available. Putting this in another way, and in the context of official statistics, value has to be built continuously.

32. In less abstract terms, one of the strongest motivations for producing data and information is its usefulness in evidence based decision making. When resources are limited and choices need to be made as to how they should best be deployed to maximum effect, reliable evidence is at a premium. This applies whether it is a governmental decision at local, national or international level, a business decision or a personal decision that is at stake. Conversely, official statistics are arguably of little value in themselves unless they help the making of well based decisions. Or, in convenient summary:

33. *Data are the lifeblood of decision-making and the raw material for accountability. Without high-quality data providing the right information on the right things at the right time; designing, monitoring and evaluating effective policies becomes almost impossible.*<sup>3</sup>

#### B. What surveys show about the current position

34. Overall, official statistics currently retain pleasingly high appreciation. The Task Force carried out a survey with the UNECE HLG Modernisation Committee on Products and Sources

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<sup>3</sup> A World that Counts: [www.undatarevolution.org/report/](http://www.undatarevolution.org/report/)

in October 2015 and received 49 replies<sup>4</sup>. According to the UNECE survey, two thirds of NSOs that responded to the survey report that the citations of their statistics have an increasing trend, and only 3 offices record a decreasing trend. While user confidence is often already at a high level, more than half of NSOs nevertheless report that the trend is rising further. (The rest do not have the information available.) Two thirds report that the importance of their statistics among users is increasing, while the other third does not have information on this parameter.

35. This is, though, a story at aggregate level. Getting below the surface indicates further information: some positive, some neutral and some more doubtful.

36. Based on individual countries' user surveys, on the credit side of the balance sheet:

- **More frequent users** seem to value statistics more highly.
- **Users who trust** official statistics most also seem to value them most highly. For example, in **New Zealand** 92% of those who completely trust official statistics are satisfied, and 85% of those who feel statistics are completely free of political interference are satisfied with official statistics, and in **Mexico**, 90% of the population that have used official statistics in their activities believe it to be essential for sound decision making.
- A gradual trend of an **increasing proportion of less frequent and first time users** can be seen.

37. At the same time user surveys show that:

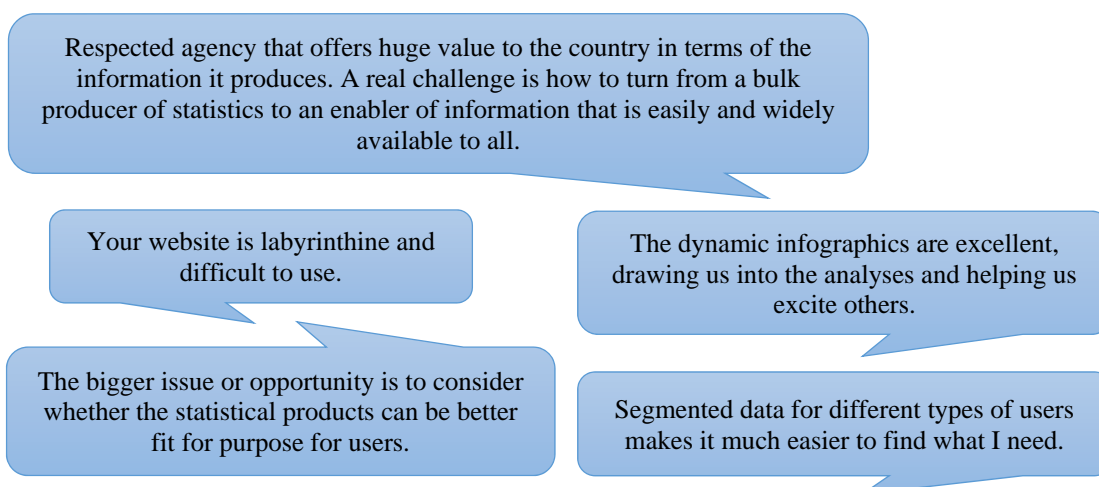
- Users who were **not satisfied with timeliness** were **less satisfied** with the overall quality of statistics.
- Users see **increasing data sharing as an opportunity** to create value, but an opportunity that is not always taken.
- The number of users who are **looking for simple and quick answers** is growing. These users tend to apply the logic of web search instead of being prepared to spend more time to browse through large data tables or to look in traditional printed dissemination. On average, **50% of users report that it is not easy to find statistics**.
- Users of international databases emphasize the importance of **international comparability**, often wishing that this was improved.
- Business **users and decision makers** tend to value and trust official statistics less than government users.
- Users are asking more frequently about the **status of statistics provided**. They do not exactly know what "official statistics" entails in terms of sources, methods, reliability, comparability, etc., and often do not know how to obtain this information.
- Users are increasingly **looking for stories and context to the figures**, whereas often they are just presented with statistics in vacuo.

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<sup>4</sup> The following countries and organizations responded: Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Canada, Chile, Colombia, Croatia, Estonia, Finland, Georgia, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Mexico, Moldova, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Ukraine, United Kingdom, United States Energy Information Administration, United States Social Security Administration, United States Bureau of Labor Statistics and CIS-STAT, Eurostat and ESCAP.



38. Some of these points are illustrated by various quotes within the feedback received.



39. *All in all, the conclusion is that official statistics start from a good base and that the overall trends are still favourable. Nevertheless, there are caveats and warning signs that we would ignore at our peril.*

### C. Official statistics and decision making

40. The UNECE survey also asked NSOs about the value of official statistics for decision making. The responses showed a remarkably wide range of decisions that were assisted by official statistics. Calculations of minimum wage, fuel surcharges, policies and strategies to reduce poverty and unemployment, population and labour force forecasts, property prices and the rental market analysis, regional development and city planning, union negotiations, transport infrastructure, education infrastructure, subsidies, quotas, government representation and electoral boundaries, health services, immigration, trade, quality of life comparisons, interest rates, budgets and finance, local, national and international strategic planning and development, crisis management, and investment were some of the uses of official statistics for decision making.

41. Furthermore, the survey suggested that where NSOs monitored the use and value placed on their statistics, there were positive trends. There were improving trends both in media citations and also in feedback about the trust and usefulness of official statistics.

42. There were also plenty of concrete examples as to where official statistics were supporting and enabling good decision making throughout societies. Annex 1 shows case study material from **Ireland**, **Finland** and the **United Kingdom**, but there would also be many other good examples that could be displayed.

43. At the same time, there was **considerable evidence of misuse, lack of use or misunderstanding of official statistics**. The harmonized index of consumer prices (HICP) was misunderstood adjusting rent on property (**Hungary**), immigration statistics were misused in an election campaign (**Switzerland**), the public perception of immigration did not match with the information available (**Italy**), the purported “vanishing advantage of a university degree” (**Canada**) and the lack of use of data for political decisions (**Lithuania**). All of these examples

point to a lack of statistical literacy or at least a lack of knowledge as to what relevant and potentially useful statistics were available.<sup>5</sup>

44. At the least, this suggests that **NSOs would be unwise to rest on their laurels**. There is clearly more to do to improve public debate and decision-making and the contribution of data and official statistics to supporting them. One lesson may be to move increasingly beyond just producing statistics but also to set those statistics in context and to bring out the story that those statistics tell.

45. There are **wider considerations that argue against complacency**. While we live in an information age where provision of information is at a premium, there is no pre-ordained reason why NSOs alone can provide that information. Potential users will take the information from *any* provider if it is perceived to have value in the terms described in previous sections. Certainly, official statisticians have considerable comparative advantages on which they can rely. These are discussed in more detail in the following section. But competing information providers have advantages, too. Sometimes, they will have resources available to them which dwarf those available to most NSOs. They may also have cultures which allow them to take up new technologies and methodologies more quickly than traditionally has been the case in the official statistics community. They may also have cultures, driven by commercial necessity, which make them more responsive to customer needs.

46. Such considerations suggest NSOs might follow at least a **three-part approach in taking matters forward**:

- First, being clear as to the nature of the **comparative advantage official statistics** enjoys and establishing the best way to exploit that advantage.
- Secondly, **examining the ways that other industries create, measure and promote their value**, as well as considering the ways that NSOs around the world do so. In that way, it should be possible not only to level upwards to best practice within official statistics but also to import good ideas and cultures from elsewhere.
- Thirdly, regarding alternative information providers not always as competitors but also as potential partners and collaborators. That could be part of a wider **enhanced partnership approach** not just with other producers but with users and other stakeholders.

47. The next three sections discuss each of these in turn.

## IV. Exploiting official statistics' comparative advantage

48. The exact ways in which official statistics are provided and their scope differs in some degree from country to country. But there are some cornerstone features which are common to each. In particular, the Fundamental Principles of Official Statistics apply to everything we do. The principles were developed over 20 years ago by the Conference of European Statisticians to help define what constitutes a good system of official statistics and what role the statistical system should play in countries. Their message<sup>6</sup> in simple terms is:

- **We are impartial:** We publish relevant findings without fear or favour.
- **We are professional:** We have rigorous quality assurance practices.
- **We are scientific:** We facilitate a correct interpretation of data by using scientific standards.

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<sup>5</sup> Janssen and Forbes (2014) further illustrate this point in their paper on "The Use of Official Statistics in Evidence Based Policy Making in New Zealand".

<sup>6</sup> Modernstats-HLG video on the Fundamental Principles: [www.youtube.com/watch?v=uxb3iOnVr1Y](http://www.youtube.com/watch?v=uxb3iOnVr1Y). This generalized video was produced based on Statistics Canada's promotional video, published in 2013.

- **We are vocal:** We provide information on the use of our statistics and interpretation of our statistics.
- **We are flexible:** We draw information from many sources.
- **We protect confidentiality:** We operate in secure physical and digital environments.
- **We are transparent:** We fully disclose our methods and standards.
- **We collaborate:** We work with statistical agencies within our country to uphold a consistent and efficient statistical system.
- **We promote efficiency:** We continually review and update our methods, processes and systems.
- **We are global:** We cooperate with international partners to ensure best methods.

49. Adherence to these principles has given official statistics a number of **major advantages**:

(a) Official statistics have **solid institutional and legal bases**. Combined with competent and professionally independent production standards, NSOs generally have strong and respected reputations and images.

(b) NSOs usually have **respected mandates to collect data**, which might be more difficult for agencies which might be seen as having ulterior motives. By the same token, respondents are more likely to provide accurate information without fear of any consequences. Furthermore, the mandate given to NSOs ensures that data are collected and published **consistently over long periods** which allows for comparison of social and economic phenomena overtime.

(c) More generally, official statistics are seen as being produced **with the sole aim of generating truthful and accurate information**. NSOs have no additional special interests to forward, as might be perceived to be the case with some other information providers.

50. These comparative advantages are potentially strong. But they do not automatically work to official statisticians' advantage in practice. Instead, NSOs would perhaps be well advised to take conscious steps to bring the gains to fruition. Such steps might include the following:

- **Take active steps to improve the branding of official statistics.** Branding is not something that just applies to soap detergents; rather it needs to be understood as active promotion of the identity and personality of official statistics – the quality, impartiality, professionalism and so on as discussed above.
- **Focus decisively on users, rather than on production.** Official statistics are not valuable because statistical offices believe so, or because they are “official”, but only if and when users perceive them as valuable. If they do not, the comparative advantages set out above count for little.
- That user focus requires necessarily **active and continuing awareness of the changing nature of user needs, and responding flexibly and quickly to such changes.**
- Willingness and the capability to **adopt new technologies and methodologies speedily when they can add to the value users obtain.** The proper weight official statisticians attach to quality sometimes leads to a false inference in favour of an excessively conservative approach to new opportunities. If value is the touchstone, being agile in adopting means to generate that value is often the best course.

51. Taking such steps in tandem with the inherent comparative advantages that official statistics have makes for a very powerful combination. However, while such steps are easily

stated, they require determined leadership to bring them about. In some cases, they require a paradigm shift in our thinking.

## V. Existing practices to measure and promote value

52. As discussed earlier, official statisticians should be able to learn not only from good and productive practices in other NSOs but also from other industries. While it is true NSOs generally have no “bottom line” to guide and motivate their approach, commercial concerns can generally also expect to make sustained profits only if they are perceived to add value. Generating value is therefore a common objective.

### A. Current practices in statistical offices

53. The UNECE survey included questions to seek information about:

- activities to monitor the value of official statistics;
- measuring the value of products and services by quantitative information;
- any other measures undertaken to improve and/or measure the value.

#### 1. Promoting value

54. Most NSOs – 94 per cent in our survey – took some action to **explain and promote the value of the statistics to their stakeholders**. In many cases, this was helped by the repeated use of key messages or phrases to embed the value of the official statistics in the public perception. Some NSOs also used a single phrase or slogan with most or all of their releases to emphasize their purpose and what they stood for. Example of such key messages and phrases are included in Annex 2.

55. NSOs are also increasingly **using new ways of presenting statistical data**, in order to reveal more clearly the value and messages from the outputs they publish. Visualisations and infographics are increasingly used and to progressively greater effect as experience of their use increases.

56. **Poland** provides an extensive Educational Outreach Programme aimed at promoting awareness of statistical products and services, and their value to society as a whole. They offer training towards an Institute of Public Administration (IPA) Diploma in Official Statistics to educate policy makers and evaluators in the use of official statistics. The Office visits schools, colleges and government departments to showcase their website and Statbank and explain how their statistics can be accessed and used.

57. In **Romania**, specific attention is paid to convincing respondents about the importance to respond to statistical surveys. Those who participate in the field work explain that “the calculation of the Consumer Price Index is very important for measuring inflation, determining the purchasing power of incomes, wages and pensions; negotiating wages and indexing pensions and allowances, supporting decision making in the social field; calculation of real interest; deflating value indicators in retail trade and services for international comparisons”.

58. In 2014, **Mexico**’s National Institute of Statistics and Geography (INEGI) developed an ad hoc training program for strategic users to facilitate the understanding of statistical concepts, data analysis and communication. As a result, INEGI signed more than 290 cooperation agreements and trained 19,785 users.

## 2. Measuring value

59. NSOs generally take steps to measure the perceived value of their outputs. **Measuring and monitoring citations** is a particularly widespread practice. Almost 90 per cent of responding NSOs monitor citations in the media to their office and to their statistics and services. Only 5 NSOs reported not doing this. Many offices have outsourced media monitoring to commercial entities. Two out of three offices report an increasing trend in citations, and only three offices report a decreasing trend.

60. Typically offices monitor citations monthly or daily:

- by types of media (printed press, online press, TV, radio, interviews or only digital media);
- and to review discussions on the web, blogs and social media.

61. Citations are typically used to review how statistics are used, perceived and that they are correctly interpreted. Some offices classify the citations into those that have either a positive, negative or neutral impact on the value and image of official statistics. Some offices reported peaks in citations around releases of statistics that are high on current political agenda of the country.

62. Since 2013, Statistics **Lithuania** has calculated a composite indicator, *an index of public interest in official statistics and services*. It covers changes in the number of unique visits on the Official Statistics Portal, the website of Statistics Lithuania and in the e-Statistics system, registered by hit counters, newly registered Portal users, individual enquiries, and cases of quotation in the monitored media, with the year 2013 taken as the base year.

63. In **Mexico** a report "INEGI in the Media" reflects the monthly institutional positioning of INEGI in the media, its impact and an estimated market value.

64. A further widespread practice (78 per cent of responding NSOs) is the monitoring of **user confidence (or trust) in the NSO and/or its outputs**. More than 50 per cent of offices reported an increasing trend of trust in official statistics, while most of the others report a stable position. Only one office reported a decreasing trend.

65. The questions in the user surveys measure confidence in the NSOs, whether users find the statistics objective or politically neutral, whether users trust official statistics, whether statistics are considered accurate or reliable and how users evaluate the image of the office. Some offices ask questions that relate directly to certain statistics such as "Do you have trust in statistics like unemployment, population, national accounts, foreign trade, industrial production which are produced by our Institution?" These surveys are typically carried out annually, or every second year or every third year.

66. The **U.S. Bureau of Labor Statistics** (BLS) has a daily trust survey that enables interesting analysis of the impact of different events or comments concerning official statistics on users' trust in statistics<sup>7</sup>.

67. More than 80 per cent of NSOs offices measure the **usefulness or importance of their statistical products and services to the users**. Two offices out of three reported an increasing trend of perceived usefulness of official statistics, while the rest do not have information about the trend.

68. Widespread practice is to ask about the usefulness or importance of statistics generally in a user survey and to supplement this by monitoring the number of web page views, web site

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<sup>7</sup> "Maintaining Credibility in an Increasingly Skeptical World", Michael Levi, Morgan Earp, Daniel Toth (Bureau of Labor Statistics, United States) at the UNECE Work session on the communication of statistics: [www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.45/2015/BC53\\_Maintaining\\_Credibility\\_in\\_an\\_Increasingly\\_Skeptical\\_World\\_edited-\\_Levi.pdf](http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.45/2015/BC53_Maintaining_Credibility_in_an_Increasingly_Skeptical_World_edited-_Levi.pdf)

users and downloads to assess the usefulness of individual statistics and services. While the use of surveys and collecting specific information is carried out by most NSOs, the particular questions and items covered naturally vary. Annex 3 sets out some of the items and topics which are covered. Some offices mentioned only measuring the usefulness among customers that order payable statistical services. In many cases, usefulness of statistics is discussed at user conferences.

69. The **United States Energy Information Administration** reports as useful simple questions on *why users came to the website*, i.e. what the users came for. This provides interesting information on the use of statistics, such as for writing a report, making an investment, teaching a class, educating themselves or briefing a decision maker.

70. Statistics **Canada** and **Spain** mention that they monitor *media coverage of statistics* by statistical themes, including census, business, demography and labour, among others. The purpose is to collect information on the use of different statistics. For instance, Spain reported over 14 million accesses to the INE database in 2014, and more than 22,000 followers of their twitter account (@es\_INE).

71. The **Italian** National Institute for Statistics (Istat) provides a possibility for *user feedback on each page* of the website. They ask users whether the content is useful and enable them to write comments.

72. Statistics **Estonia** uses a *recommendation index* as an indicator of customer satisfaction. On the rating scale 0–10, those who give 9–10 points are considered recommenders and those who give 0–6 points are considered non-recommenders. The recommendation index is calculated as the share of non-recommenders subtracted from the share of recommenders.

73. Much less common have been attempts to quantify the monetary value of statistical products. In principle, this would be a powerful means of measuring and promoting value since it would allow a direct cost benefit analysis, comparing the benefits of a particular statistical product with the costs of producing that output. In practice, the difficulties of realising such an approach have been substantial. Nevertheless, both the New Zealand and Spanish NSOs have carried out pioneering work. It seems worthwhile persevering with such work.

74. Statistics **New Zealand** assesses the economic value of some of its statistics:

- Population Census<sup>8</sup>: The project concluded that despite significant difficulties in developing a rigorous quantification, it is reasonable to conclude that the census delivers benefits well in excess of its direct costs. The results suggest a net present value of close to \$1 billion over the next 25 years. In other words, every dollar invested in the census generates a net benefit of five dollars in the economy. The economic value was calculated based on a thorough review of the main uses of census data in health, education, social development, resource allocation, policy making and research by central and local government, the private sector and the academia.
- Statistics New Zealand is undertaking experimental work on measuring the economic value of the Consumer Price Index (CPI) and tertiary education data in the Integrated Data Infrastructure (IDI). The objective of this work is to develop a methodology and capability for measuring the economic value of statistical outputs.
- Customer Measurement Framework: a project to develop a framework and indicators to measure users' awareness, access, use and satisfaction with products and services of Statistics New Zealand.

75. Since 2012, the **Spanish** Statistical Office (Instituto Nacional de Estadística, INE) has been measuring the *economic impact of statistical information in the media* to have a more

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<sup>8</sup> "Valuing the Census", Statistics New Zealand, April 2013: [www.stats.govt.nz/methods/research-papers/topss/valuing-census.aspx](http://www.stats.govt.nz/methods/research-papers/topss/valuing-census.aspx)

accurate perception of how the public values official statistics and to know about their interests. INE evaluates news regarding their office and its statistical activities in 1,327 written publications (newspapers, magazines and supplements), 18 radio stations, 28 television channels and 6,410 online platforms. Based on this, the value of INE operations in the media is estimated to have increased to 372 million euros in 2014.

## **B. Practices in other industries**

76. The previous sections make clear that NSOs can learn about good practices from each other. But the fundamental issue of generating value is no different from that faced by other industries, including those businesses in the commercial sector. It is therefore important to consider what can be learnt from this source.

77. The findings presented in this section are based on case studies of a selection of companies and industries. These were chosen to include a mix of different types of company/industry, and include both well-established, and newer and more innovative ones. The compilation of the case studies was based solely on internet research.

78. The following companies/industries were selected and case studies prepared:

- Apple Inc – a company that designs, develops and sells electronics, computer software, on-line services, and personal computers.
- Amazon – an electronic commerce and cloud computing company.
- BMW – a luxury car producer.
- Google – a technology company specialising in internet-related services and products.
- Meteorological services – responsible for the provision of weather information and forecasts.
- UK Pharmaceuticals – develops, produces and markets drugs and pharmaceuticals for use in medications.
- JH Whittaker and Sons (Whittaker's) – a New Zealand confectionary company specialising in chocolate.

79. The full case studies are included in Annex 4. The following discussion is based on an analysis of the case studies to draw out key themes relating to the delivery and communication of value across the selected companies/industries.

### **1. Generating value**

80. Analysis of the case studies reveals several key themes in the way these businesses generate and promote value:

- Customer focus
- Good design
- Determined innovation
- Effective use of partnerships
- Brand development and recognition
- Focus on ultimate economic and social impact

81. These are discussed in turn.

(i) *Customer focus*

82. **Staying relevant to the customer is crucial to all of the businesses considered.** Put simply, if a business doesn't produce products that provide value to its customers, then it will cease to exist. Understanding what customers do and do not value allows businesses to innovate products, services and capabilities to fit these needs, to the business's advantage.

83. At **Apple**, the culture is fundamentally designed to put the customer at the centre of everything it does, from the design of its products through to the design of its retail stores. 'We put ourselves in the customer's shoes'. Apple is constantly working, as it says, to delight customers with the release of new products, as well as in evolving its products and in its store design.

84. **Amazon** also has strong customer focus. 'Our vision is to be earth's most customer-centric company'. The philosophy is that what is best for the customer ultimately turns out best for the business. Developers focus first on what value is to be delivered to the customer, and only then how to do so, instead of building technology first and only then thinking about how to use it.

85. **Google** has the same approach. 'Worry about the money later, when you focus on the user all else will follow'. Early in Google's history, it released some of its products as 'beta launches' and then made iterations as customers fed back what they wanted more and less of. Google continues to listen carefully to user feedback after each launch and revise products based on what it hears.

86. **Meteorology offices** have also learnt that simply providing the best weather forecast or climate outlook is no longer sufficient. 'A weather forecast only has value if it can be used to make decisions that yield attractive benefits to users'. Increasingly, meteorological offices are seeking to build relationships with customers to ensure that they are providing the information needed to reduce uncertainty and improve decision-making.

(ii) *Good design*

87. Design is also a recurring feature and allies naturally with customer focus. Having identified what it is potential customers want, the natural next step is to **design products and services that fit the need**.

88. The effective use of design is a valuable source of differentiation, and gives customers a reason for buying from a firm and not its competitors. Design also adds value to products and services and improves their accessibility to customers. Customers are often willing to pay more for well-designed products that can offer benefits such as greater usability, improved functionality and improved aesthetics.

89. **Apple** is one exemplar. Its design philosophy is to make complex things simple, and produce products that are intuitive and easy to use. Apple products are designed to work together and use the same basic architecture. In addition to using design to make its offerings more valuable, Apple has also used it in the location and layout of its retail stores. The stores are strategically located in high traffic urban shopping districts to attract customers.

90. **Google** has also made design a priority to ensure that it could compete with Apple. 'Our goal is to design everything so that it is beautifully simple. Each product should have an intuitive, simple and beautiful design that delights users every time they visit'. Unveiled last year, Material Design, Google's evolving language for mobiles, tablets and desktops, offers consistency in interactions, invisible rules that govern everything, so that every app feels familiar, and provides 'beauty in service and function'.



*(iii) Determined Innovation*

91. Design may be critically important but it needs to have something to work on. For this reason, **concentration on innovation** is a further recurrent feature of the case studies in how the businesses generate value. Creativity and innovation can lead to new and more attractive products, more efficient and effective work processes and in consequence increased sales and increased customer satisfaction.

92. Each year, **Google** invests billions of dollars in technology and research and development projects. It encourages blue sky thinking by giving employees 20 percent of their work time to pursue projects that they are passionate about. Many wind up as new products or product improvements.

93. **Apple** has also invested heavily in research to underpin good design. The company believes that focused investments in research and development are critical to its future growth and competitive position in the marketplace and are directly related to new and enhanced products. It also fosters innovation through its HR practices. Apple rewards and recognises employees for energy and enthusiasm in innovation.

94. Innovation is also an integral part of BMWs product development. It spends around 25 percent of its profits on research and development, which it believes have led to products that continue to attract the public's approval

95. At **Amazon**, experimentation and willingness to invent is a strong part of the culture. 'If you double the number of experiments you do per year, you're going to double your inventiveness'. Amazon has created its own internal experimentation platform called 'Weblab' that it uses to evaluate improvements to its website and products.

96. In the **pharmaceutical industry**, research and development is critical to the development of new and effective medicines for patients, across a huge range of diseases and conditions. Without research and innovation being at its core, the industry would have been unviable.

*(iv) Productive partnerships*

97. The fourth recurrent theme from the case studies is the importance attached to formation of well-considered partnerships. **'For generations companies built moats between themselves and their competitors. Today, the most successful companies build bridges'**. Firms taking advantage of strategic partnerships can utilise the counterparty's strengths to make both firms stronger in the long run. Teaming up with others enables businesses to generate value and gain competitive advantage through access to a partner's resources, including markets, technologies, capital and people.

98. **Weather offices** are increasingly forming partnerships with academic institutions and software companies to improve their efficiency and impact. For example, in the UK, the Met Office has established a Met Office Academic Partnership to bring together the Met Office and leading universities in weather research (Universities of Exeter, Oxford, Leeds and Reading).

99. **Amazon** has been able to consolidate its strength in different sectors through its partnership arrangements and through using technology to facilitate product promotion and distribution via these partnerships. The Amazon retail platform enables other retailers to sell products online using the Amazon interface and infrastructure through their 'Syndicated Stores' programme. For example, in the UK, Waterstones, a largest traditional bookstore, entered into a partnership arrangement where Amazon markets and distributes its books online in return for a commission. Such partnerships help Amazon to extend its reach into the customer base of other suppliers, and customers who buy in one category, such as books, can be encouraged to purchase in other areas such as clothes and electronics. So both sides benefit.

100. **Whittakers** has also collaborated with other companies where there is a link to chocolate. For example, it produced a co-branded product 'Lewis Road Creamery Chocolate

Milk Drink' that has attracted a huge consumer following. It has also entered into partnerships with commercially successful brands such as L&P and Jelly Tip.

101. **BMW** recognises that future generation cars cannot be built without more input from telecoms and software companies, so is exploring deeper relationships with companies such as **Apple**.

(v) *Brand management and recognition*

102. All of the businesses in the case studies place great weight on brand recognition as a means of delivering and communicating value. They see this as no less important than the goods and services they produce. **Successful pursuit of brand recognition can generate major value for a company.**

103. It is probably best taken, however, as being not an independent ingredient of success but rather something that builds on the potential value from customer focus, good design, innovation and from focused partnership working. A branding exercise based on purported reliability or user friendliness would be unlikely to be successful if the underlying product or service did not have such attributes. Brand promotion is, rather, about communicating and promoting these underlying ingredients of value. Different businesses have adopted varying approaches to this.

104. Both **Apple** and **Google** have achieved brand success by courting media coverage. Being aggressively global has also been important to the success of these brands.

105. Some companies strive for recognition of their brand by using external evaluations and taking part in award competitions, to achieve third party endorsement. Apple, for example, has been the recipient of repeated awards from the US National Academy of Television Arts – “Tech Emmys” - that it believes have helped its branding. A study by Hendricks & Singhal of the University of Western Ontario and Georgia Institute of Technology confirmed the validity of such an approach. Award winners outperformed the control group on profitability, return on sales, growth in employees and growth in assets.

106. **BMW** has used external evaluation to increase the performance and value of the company.

107. ‘Through the EFQM assessment we receive objective, valuable and helpful suggestions about our strengths and – even more important – potentials. We use it in the strategy and target process to decide about ‘doing the right things’.

108. This assessment has been confirmed in objective measures of increased value.

109. In New Zealand, **Whittakers’** has been listed the most trusted brand in the Readers Digest Survey of Most Trusted Brands for four consecutive years. The company has increased its market share in each of those years. Whittaker’s marketing head says that the award helps with the company’s marketing strategy.

110. ‘Each year many brands use these little winner badges on their packaging. **As a consumer facing a shelf full of items, it’s human nature to make comparisons and look for signals, so why not use the one with a little medal on it’.**

(vi) *Impact and outcomes*

111. Ultimately, as discussed earlier in this report, organizations in both the public and private sectors generate value via their impact on social and economic outcomes. Whereas previously, most companies focused on assessing value in terms of the bottom line, there is now, for good commercial reasons, **a stronger focus on demonstrating value in terms of impacts on society.**

112. Meteorological offices, for example, promote the role they play in reducing loss of life and economic damages. Many businesses - construction, agriculture, retail and manufacturing,

and leisure and tourism, for example - rely on weather reports that directly affect their profitability and contribution to the economy.

113. The pharmaceutical industry also underlines the contribution it makes to the health and wellbeing of the population, and to the economy. In the UK, the pharmaceutical sector's contribution to the balance of trade was the third greatest of nine major industrial sectors. On the social side, medicines developed by the pharmaceutical industry have helped the prevention or cure of previously life threatening diseases. In other cases, they have changed acute 'death sentence' illnesses to manageable chronic conditions. The industry also points to its impact in reducing the burden on national health systems.

## 2. Measurement of value

114. Information on how industries and companies measure value is often not freely available because they see this as commercially sensitive information. However, from publicly available information, measurement is focused on the following dimensions:

- Financial metrics
- Customer satisfaction
- Measures of innovation
- Wider economic impact.

### (i) *Financial metrics*

115. Most of the industries and firms included in this study **use a range of conventional financial measures to monitor their progress**. These include metrics such as revenue, profitability, sales growth, return on invested capital, market share and shareholder value. Most of these metrics are published regularly in annual reports by companies such as **Apple, Google, and Amazon**.

### (ii) *Customer satisfaction*

116. A range of customer satisfaction measures are also used to help track how companies are performing.

117. Apple, Amazon and Google all use the American Customer Satisfaction Index (ACSI) **customer rating to compare themselves to their competitors**. The ACSI is a cause and effect model with indices for drivers of satisfaction (customer expectations, perceived quality and perceived value), satisfaction (ACSI) and outcomes for satisfaction (customer complaints and customer loyalty, including customer retention and price tolerance). Benchmarks are provided by company, industry, sector and brand. ACSI clients gain access to in-depth perspectives for their own company as well as for industry peers and competitors, which gives them strategic insights into their organizations customer relationships and its competitive stance in the marketplace.

118. **Apple** also uses the **Net Promoter Score (NPS)** to track customer satisfaction and loyalty. This is based on asking customers a simple question: **'How likely are you to recommend our company, products or services to a friend or colleague'**? Those who respond with a score of 9 or 10 are called promoters and are considered likely to exhibit value creating behaviours, such as buying more, remaining customers longer, and making more positive referrals to other potential customers. Those who respond with a score of 0 to 6 are labelled detractors, and are believed to be less likely to exhibit the value creating behaviours. Responses of 7 and 8 are labelled passives and their behaviour falls in the middle of promoters and detractors. The NPS is calculated by subtracting the percentage of customers who are detractors from the percentage who are promoters.

119. The NPS plays a central role in the daily management of Apple's retail stores. Store managers call every detractor within 24 hours. The outcome of these calls, together with the customer comments, provides important feedback that is passed along to employees. Studies have shown that every hour spent calling detractors was generating more than \$1000 in revenue or additional sales of \$25,000 in the first year.

120. **Amazon** tracks its performance against about 500 measurable goals, nearly 80 percent of which relate to customer objectives. Details of the full suite of customer-based measures are not readily available but include metrics such as percentage of orders from repeat customers and growth in the number of customer accounts.

121. **BMW** constantly measures product-based satisfaction and satisfaction with sales and services. A sample of services or new vehicle customers is surveyed for satisfaction with the dealer's performance after every visit to the dealership. In addition, the company runs regular market research studies to track customer satisfaction.

*(iii) Innovation*

122. Apple, Google and Amazon all **track the value generated by innovation**, because of its importance to them. Measures used include percentage of revenue spent on research and development (R&D), percentage of revenue coming from new products, and R&D expenditure as a percentage of net sales.

*(iv) Economic impact*

123. With increasing pressure for accountability for use of public funds, meteorological offices are increasingly **seeking to quantify the impact** of weather variability on the economy or different sectors of the economy, such as agriculture, retail sales, and aviation. For example, it has been estimated that weather variability accounts for as much as 3.4% of GDP in the USA, and that a third of economic activity is impacted in some way. The extent to which accurate forecasting can mitigate these effects is therefore an important measure of success.

124. The pharmaceutical industry has also sought to demonstrate its value through the use of **measures that quantify the industry's contribution to the economy**. Measures used include the contribution of the industry to GDP and national income, and its impact on the country's trade balance and employment.

## C. Comparison of official statistics' and other industries' approaches

125. NSO's conduct a range of approaches, both to measuring the value and impact of their outputs and to promoting that value. Individually, we can all learn from other NSOs good ideas and practices. Other industries have similar concerns about value and how to promote their businesses' generation of it. On the basis of the discussion above, **other industry approaches are often more assertive and wide ranging than those reported by NSOs**. A more significant difference in emphasis, however, is the extent to which the businesses described above have embedded value generation and promotion into their overall business model. Customer focus and brand recognition, being supported by emphasis on cultures and modes of operation likely to feed these, appear much more central to their operation.

126. Exactly how large such differences are is a question which can be reasonably debated. But what is undoubtedly true is that these **other industry approaches are a fertile ground for NSOs' attention**. We can learn from them, just as we can from each other.

127. As a high level summary, one might think of a paradigm for the generation and promotion of value in the following terms:

- (a) Begin with a firm **focus on the customer**/user and his/her needs.

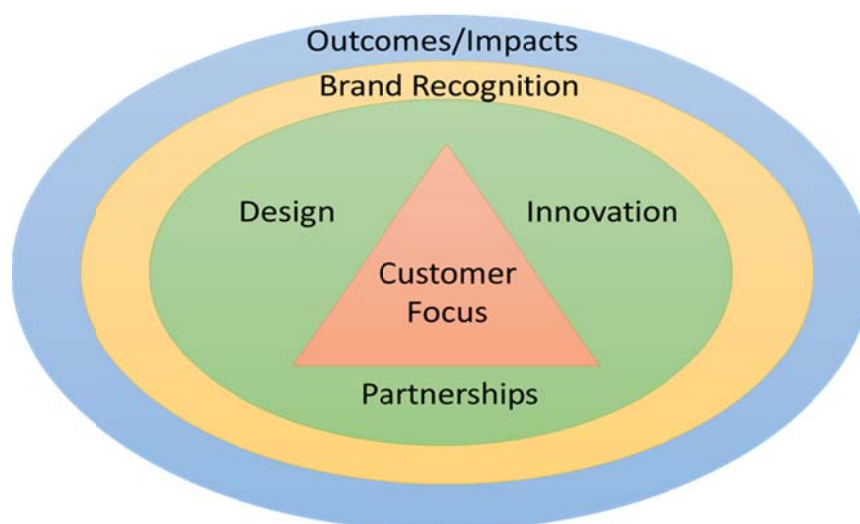
(b) Place **stress on design of products and services** to meet those needs, based on **continuing innovation** and on the fruits of well-chosen **strategic partners**.

(c) **Invest in brand recognition and promotion** so that those well designed and innovative services are well known and trusted.

(d) In this way, **generate beneficial outcomes** and impacts on society...

... which in turn are widely recognised as having added value.

Or, in terms of a diagrammatic representation of concentric circles:



## VI. Building value through partnerships

128. Previous sections have drawn attention to the potential that partnership can have in generating value from official statistics. Indeed, NSOs already engage in extensive partnerships of different kinds. In 2014, the High-Level Group for the Modernisation of Official Statistics carried out a survey which identified some 57 such partnerships in 25 different countries or organizations. **The most common type of partnership is with a data provider, followed by analytical partners.** A few partnerships are with data consumers, design partners and technology partners. This indicates that access to data is currently the main reason for engaging in partnerships. NSOs are able to use partnerships with the public and private sector, civil society organizations, academia, and other stakeholders to achieve broader and more accurate data collection:

- At an operational level, **partnerships fill a range of needs**: funding, knowledge sharing, advocacy, development of reference materials, outsourcing of services as well as supporting the data production and access to data. Recently, to a degree, NSOs' business models have expanded to include Big Data and "crowdsourcing" as components of partnerships.
- Strong strategic **partnerships also yield more visibility** for statistical agencies. Collaborative outreach can be a powerful tool to encourage the use of official data and engage with specific audiences.
- By sharing successes and challenges in pursuing partnerships, agencies can work together to promote the value of official statistics and **establish governance models** while maintaining the independence and public trust that are central to the work of a statistical agency.

129. This discussion is based on the in-depth review carried out by Statistics Canada for discussion at the CES Bureau in October 2015. Examples of partnerships are discussed in more detail in Annex 5. The rest of this section discusses some of the main features of the partnerships that are in place under the categories below:

- Partnerships with stakeholders
- Partnerships through engagement activities
- Partnerships to leverage Big Data
- Crowdsourcing

#### A. Partnerships with stakeholders

130. Partnerships with the public sector are carried out through bilateral or multilateral agreements at the national or international level. They contribute to official statistics by supporting data acquisition, advancing statistical business processes, and developing information technology infrastructure, tools and software. These partnerships increase the value of statistics by supporting existing programs and addressing data gaps.

131. Partnerships are also crucial for the coordination of national administrative data. A prevalent theme among statistical agencies is to reduce response burden by **taking a whole-of-government approach to data collection and production**, including the sharing of government-held data to reduce duplication.

132. Internationally, **data exchanges between statistical agencies** are long standing. They can help triangulate, for example, information about trade or capital flows, or indeed in a globalised world, about international production sequences.

133. Partnerships with commercial organizations are likely to become more prevalent as statistical agencies venture into Big Data and crowdsourcing. In most cases, private sector partners are both data providers and data users. Many organizations see significant benefits from taking a collaborative approach.

134. One **promising avenue is the use of private sector administrative data** for the purposes of constructing official statistics – for example credit card company information or utility company records to yield information about residency or lifestyle.

135. A number of NSOs have agreements with software or wider IT companies to provide **information technology services**. Such service agreements can have both reactive and proactive dimensions. Reactive services ensure that critical issues that could affect the business systems are addressed with the high priority. Proactive services ensure that systems are in place that move to, or towards, industry standards and best practices.

136. Other partnerships take the form of **structured relationships with users**. The NSO might offer advice and training in the use of its products. Conversely, users have the opportunity to provide feedback or, more actively, to help shape the development of existing or new products.

137. The civil society sector is instrumental in promoting local economic development, alleviating poverty, advocating policy change, contributing to good governance. Partnerships with civil society **foster better response rates** from the business sector, which will translate into better quality data, thus increasing the value of official statistics. Moreover, the use of official data among key decision makers adds credibility and augments the public trust necessary for statistical agencies to function.

138. Existing partnerships of this kind embody collaboration on statistical business processes and for data acquisition, as well as for funding purposes, knowledge sharing and mutual exploration of strategic issues.

139. Partnerships with the academic and research communities are carried out to support fundamental and applied research, **facilitate microdata access**, promote the use of analytical tools, influence academic curricula, establish joint professorships and share knowledge. They contribute, among others, to substantially increase the availability of public-use data files and improve access to official statistical data.

140. Several national statistical agencies have partnered with universities **to extend their capabilities and improve their data-gathering practices**. Other initiatives have aimed at partnership with secondary schools. The aim has been to increase statistical awareness and literacy amongst the pupils concerned, which works to the NSOs advantage as well as fitting the schools' objectives.

141. In some cases, partnerships involve multiple stakeholders, not necessarily all from the same sector of society. Examples include partnerships carried out for data acquisition; the development of IT infrastructure, tools and software; and statistical business processes. These partnerships are instrumental in **advancing access to the data community, helping maximize the re-use of data and ensuring that historic data remains available** for research in years to come.

## B. Partnerships through engagement activities

142. Engagement activities help to accomplish various goals, such as encouraging respondent participation, gaining support from influential bodies, showcasing the value of official statistics and promoting their use by giving access to data and tools, and offering training and support. They also strengthen existing relationships. This type of **collaborative partnership is a powerful tool to encourage the use and appreciation of official statistics**.

143. Engagement is generally an ongoing relationship which can be more or less strong and more or less structured. It might, for example, embody ongoing partnership between an NSO and its respondents, aimed at securing required information in the least burdensome way. Also common are engagement mechanisms with users incorporating briefings, presentations and workshops aimed at ensuring maximum understanding and exploitation of the available value of official statistics. An extension involving one particular class of users is **joint events with commentators and other outside experts, with the goal of improving public debate** and civil decision making regarding key issues.

## C. Partnerships to leverage Big Data

144. Every day, 2.5 quintillion bytes of data are created. These data come from digital pictures, videos, post to social media sites, intelligent sensors, purchase transaction records, and cell phones' GPS signals, to name a few, and comply with the following attributes : volume, velocity, variety, veracity, variability and value, in other words: Big Data<sup>9</sup>.

145. The advent of Big Data, with its potential impact on the core business of statistical organizations, points up the potential of partnership arrangements to drive this agenda forward. Due to the uncertainty, complexity, velocity and size of Big Data, many NSOs may not have internal expertise in design, analysis, and technology that would be needed to exploit the

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<sup>9</sup> "Performance and Capacity Implications for Big Data", IBM Redpaper, International Technical Support Organization, [ibm.com/redbooks](http://ibm.com/redbooks)

opportunities in full. **Partnership working to assemble the full portfolio of skills and experience that will be needed** for using Big Data seems an obvious option. Candidates for such partners could be found amongst the academic sector research institutes, technology providers, data consumers, data privacy protectors and businesses.

146. Apart from other advantages, such partnership can also pay dividends in more intangible ways. These derive from the coming together of different backgrounds, cultures and skills of the various parties.

#### D. Crowdsourcing

147. While historical examples can be cited of crowdsourcing over several centuries, its modern use for assembling statistical information from a disseminated group of inputters is still in its infancy. In principle, however, it is a technique that could locate and assemble information, analyze existing information, seek help to find an empirical solution, and evaluate public taste or public support.

148. **Its potential is as a low-cost partnership that produces timely and relevant data.** It also potentially unites diverse resources and people, helping organizations to innovate and achieve better results.

149. There are currently only limited examples of such partnerships involving NSOs. But it is an avenue that should be kept in mind.

#### E. An assessment and going forward

150. The discussion in the previous sections, supported by the examples set out in Annex 5, show that NSOs already engage in many partnerships, in diverse ways and with diverse counterparties. Some will be more relevant to the circumstances of particular NSOs than others. Nevertheless, there is clearly a rich quarry available for mutual learning amongst NSOs.

151. At the same time, it is possible to discern **areas where the potential for gain has not yet been fully exploited** by the actual partnerships in place:

- One relates to the **building of shared systems and frameworks**. The **Australian** Bureau of Statistics and the **Dutch** Central Bureau of Statistics have highlighted the efficiency that can be achieved through international collaboration in business architecture development. But there is much more that could be achieved. Creating an internationally shared statistical infrastructure would be greatly assisted by the identification of effective models of collaborative development. NSOs, facing increasing demands for statistical information and static or declining financial resources, would be well advised to focus on this agenda.
- A particular aspect of this relates to **assistance to developing countries in the modernisation of the architecture of their statistical systems**. Often, green field opportunities present themselves in such countries. Potential gains from shared development of common business architecture are therefore particularly prominent, a fact that should be reflected in technical assistance programs. Statistics **Canada** is doing so with its International Statistical Fellowship Program in countries in Africa, Latin America and the Caribbean, but also in its bilateral technical assistance activities, and **Mexico's** INEGI is promoting the development of spatial data infrastructure in member countries of the Association of Caribbean States.
- Notwithstanding arrangements already in place in some countries, **stronger partnerships with other government organizations, other levels of government, businesses and non-government organizations** will be needed to gain access to old and new data sources and to adapt them to the needs of official statistics. This will be especially the case in forming broader



partnerships with the originators of administrative data files to obtain changes to yield the full potential benefits from administrative data to increase the value of official statistics

- Again notwithstanding existing arrangements in place, there would seem substantial untapped **potential for collaboration with the private and commercial sectors**. Partnerships currently in place tend to concentrate on these sectors as users or as suppliers of data through traditional sources. Where the potential seems most to exist is: (1) in developing and sourcing new types of information to displace and complement traditional surveys; (2) developing technologies provide new and exciting opportunities for data collection, direct measurement and data dissemination; and (3) creating new products and sources of information to guide decision makers which can only be achieved by NSOs and commercial concerns working together.

## VII. Towards better measurement of the value of official statistics

### A. Towards a framework with a set of indicators

152. When it comes to measuring the value of official statistics, several questions need to be addressed. The first and perhaps most basic one relates to the choice between the various methodologies one could potentially apply:

- **Observable “objective” indicators:** indicators like the number of downloads, the number of citations by type of media, etc. that can be collected from existing sources are relevant for analysing the value of official statistics. Each of these indicators will, almost by definition, provide information on a specific aspect of the value of official statistics, thus not being representative of the full value. Further, subjective choices in the selection of the vast array of possible indicators, need to be made in order not to drown in a plethora of them. As such, the representativeness of the indicators and the need to make an appropriate selection of a limited set of indicators are in tension.
- **“Subjective” indicators derived from user satisfaction surveys:** indispensable to assess the value of statistics in terms of the user confidence and trust in official statistics, the usefulness and accessibility of official statistics. Dedicated surveys could be done on a periodic, say annual, basis, or could be addressed to a sample of visitors of the website on a more continuous basis.
- **Methodologies trying to value/monetise the value of statistics:** being able to put a monetary value to official statistics would provide a very powerful and convincing tool for demonstrating its value. Some attempts have been made to apply such a monetary valuation but so far not with great success. A key issue to be addressed, in the absence of observable prices, is finding convincing ways of determining appropriate shadow prices to underpin the calculation of value. A further issue is avoiding missing part of the output or double-counting some output elements. Accordingly, the list of proposed indicators below does not contain any attempts to arrive at monetary values. That does not mean, however, the work in this field should be abandoned. Indeed, (1) there would be value in sharing examples of experimental work in measuring the value of official statistics (such as estimating the economic value of census data, the consumer price index or the value of statistics in general), and (2) putting valuation techniques on the agenda for future research.

153. In the selection of indicators, the diagram on page 4 is a good starting point. However, there are other dimensions or issues to take into account:

- **While it is important that the brand of official statistics is recognized, it is not enough.** People may know the name of the statistical office and its logo, but they still often do a Google search, if they need statistics on a certain phenomenon. In an event at a university in Ireland, when asked how many knew the statistical office, almost everyone did. But when asked how many had visited the website of the statistical office, only two hands out of 200 came up.

- Furthermore, we may think that we are very innovative in producing new tools and ideas to communicate statistics, **if they are not recognised and used by the public at large, it has no value added.**
- The **ultimate focus should be on what the users want:** are the data they are looking for available, are they available at the right level of detail, sufficient quality and in the right format? How many users do we have? How do they use our statistics? How useful are our statistics for them? In this respect, design, innovation, partnerships and brand recognition are important intermediate stages in generating value from official statistics. But the value to be measured must be based on the actual use made of official statistics, their accessibility and their perceived quality and usefulness.
- Having **indicators on the inputs** (e.g. hours spent on development work) **may be useful as a management tool but these do not themselves tell us anything about the ultimate value generated in terms of impact.**

154. Furthermore, **an important criterion is the measurability of the indicator.** For the subjective indicators, this implies having available means to survey user satisfaction on a regular and reliable basis. It would also be desirable to arrive at a set of indicators that allow for international comparison. Although difference in the outcomes across countries may (heavily) depend on cultural differences, international comparison may provide useful information for mutual exchanges of experiences and best practice.

155. Finally, it is **important to know more about potential users who presently are not using statistics.** Why are they not using official statistics? Are they not aware of the statistics we offer? Are our statistics not useful to them? Are the statistics not in the right format or timely enough? The same holds for the need to improve our knowledge on what kind of statistics people are looking for, to have more knowledge of what it is that our users actually need and value.

156. Below, two concrete proposals are put forward:

- The first concerns the identification of key objective indicators. **Themes for objective indicators were selected based on Task Force members' views on the 5 key things statistical offices would be doing if they were really successful in their work.**
- Secondly, to arrive at a limited set of subjective indicators, **an internationally harmonized minimum set of issues is proposed that need to be addressed in user surveys. As a next step, these questions could be further refined and developed into a survey tool** with the UNECE HLG, and subsequently be used by statistical offices as an online survey tool.

## **B. Possible indicators**

157. When looking at possible objective indicators, one would typically look for indicators that reflect the actual use of official statistics in the various domains (policy, research, media, general public, etc.). In addition, one could include indicators which reflect the adherence to the Fundamental Principles of Official Statistics.

### **1. Key themes for objective indicators**

- **Indicator(s) on the actual use of statistics:** These include indicators such as the number of visits to the website and data downloads, by topic. These indicators and their developments over time would provide a fair reflection of (the changes in) the actual use of official statistics. They can also reflect the acquaintance of users with the statistical office. Obviously, one would like to have more information on the type of users, and whether or not the users could (easily) retrieve the

relevant data, and whether or not they are satisfied with the results. Such information could be collected via the surveying of visitors on a sample basis (see also below, under the subjective indicators) or implementing a Customer Relationship Management System (CRM).

- **Indicator(s) on the relevance of statistics:** An important indicator is constituted by the number of citations in the main newspapers/news-websites, radio and television channels, for example related to press conferences, press releases, and other specific communication channels (e.g. blogs or “web-magazine on the website”). This indicator including the development over time provides a good indicator of the impact of statistical “news”, its relevance for public debate, the branding of and the trust in official statistics. The number of citations in research and policy would provide a different cut on the degree of relevance and trust in official statistics, but now for more specific groups. An analysis of the alternative data sources used may provide additional information on what reasons users have not to use official statistics.
- **Indicator(s) on the transparency of statistics:** One indication of transparency would be the publication of an advance release calendar, and the publication of an indicator reflecting the adherence to this calendar. In addition, one could collect information on the quality framework in place, and make the results of reviews/audits publicly available. The latter may also be relevant for the indicator below.
- **Indicator(s) on the quality of statistics:** The most obvious summary would be the magnitude and direction of regular revisions in economic growth or a continually updated list of international best practices implemented by the NSO. As economic growth is based on a whole array of underlying data sources, it may also provide an indication of reliability beyond the remits of national accounts. Such indicators would have to be used with care, however, given for example differences in revisions policies between countries.

## 2. Key themes for subjective indicators

158. Indicators on more subjective perceptions could relate to the following topics and recommendations. Some of the questions are more generic in nature, and thus intended for all users. Other questions, such as the ones on innovation, may need to be more targeted at specific, better informed user groups. In parallel with obtaining information of these issues, it would be desirable to establish ways of generating more information on the users of official statistics (age, gender, level of education, etc.) and the use of official statistics (how often do they use official statistics; for what purpose do they use the statistics; and from where do they typically get data?)

- **Satisfaction with products and services (recommendation 1 of the next section – quality and Fundamental Principles):** First and foremost, one would like to know whether the user did manage to find an answer to his/her question(s), whether or not the relevant information was easy to find (e.g. accessibility of statistical databases), and to what extent the information needs were met. This analysis could be further deepened by asking questions on what the user considers the most important characteristics of official statistics or statistics more generally (e.g. timeliness, accuracy, trustworthiness, (inter)national comparability, etc.), and how he/she rates official statistics on each of these characteristics.
- **User Support (recommendation 2 – customers at the centre):** Under this heading, questions could be asked in relation to the general perception of user on whether or not we are doing well, what the user thinks we could do better in serving users.
- **Design, communication and metadata (recommendation 3 – design for everyday life):** Here, questions could be raised on the design of the website in general, and the statistical warehouse in particular: how easy/difficult it is to navigate and find the relevant information, how

satisfied the user is about the visualization of official statistics (videos, infographics, maps, graphs, indicator sets), etc.

- **Relevance, responsiveness and innovation (recommendation 4 – innovation):** How effectively does the statistical office inform the public debate on current issues affecting our country, to what extent do you think that we are innovative in the way we work (e.g. using new technologies, methods and data sources), how important are official statistics in helping to understand societal developments.
- **Awareness of brand and message (recommendation 6 – branding):** Under this heading, questions could be raised on the trust in official statistics, the perceived lack of political interference, and the overall satisfaction with the statistical office.
- **Specific products and services (recommendation 7 – measure outcomes):** Have you heard of “xxx” statistics, how satisfied are you with the quality of the following “xxx” products and services, have you used public use files or anonymized micro data and for which domains would you need them mostly, do you think there are benefits for you or your organization from increased sharing of anonymized data, etc.

159. In addition, it is useful to conduct or participate in occasional targeted surveys in addition to the main user survey, for instance:

- **Government-wide surveys** on how well people recognise different agencies, their logos and mandates, including the NSO.
- **Online surveys that appear on the NSO’s website** with a couple of targeted questions on the usefulness of the website and its functions.
- **Key stakeholder surveys** to find out about their specific needs. This would be a useful tool for developing effective partnerships (**recommendation 5 – partnerships**) and realigning the communication strategy.

## VIII. Recommendations for increasing and communicating the value of official statistics

160. As the earlier sections of this report have discussed, NSOs have considerable assets at their disposal. They start from a position where usage of their outputs is generally increasing and where user confidence and trust is rising, often from already high levels. However, the official statistical community would be unwise in the extreme to regard this as a prescription for resting on its laurels. Changing needs and circumstances present numerous challenges. The world is not short of information: on the contrary, it is awash with it. Many bodies would claim to generate useful information and official statisticians have no monopoly on that. Developments in technology are likely to underline rather than detract from this conclusion. The challenge for official statistics is to demonstrate that they nevertheless continue to add, and indeed add growing, unique value.

161. The discussion in previous sections has suggested the following way forward:

- Identify and exploit fully the comparative advantages of official statistics.
- Level up to best practice, not only in other NSOs but also in other organizations and industries which also aim to generate value and promote their role in doing so.

162. *This leads to a number of more specific recommendations for the way forward. The first recommendation relates especially to the comparative advantage of official statistics, discussed in sections III and IV.*

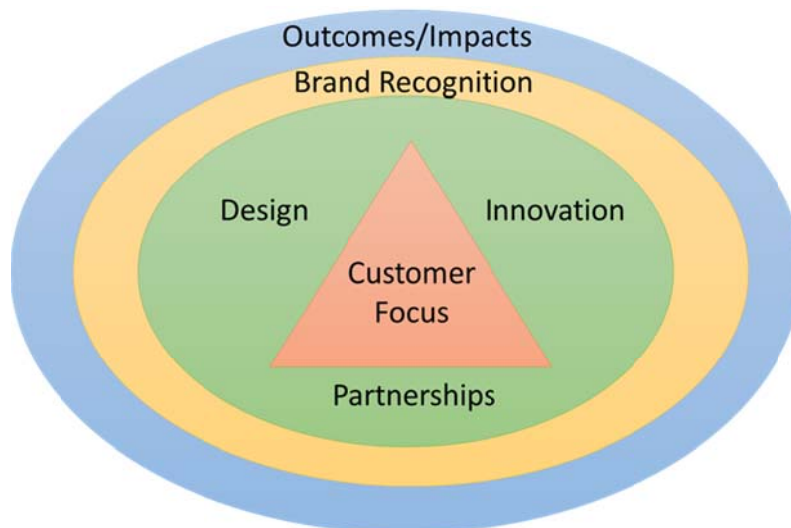
## 1. Recommendation - Exploit the comparative advantage of official statistics (the cornerstone)

163. Official statistics are produced in full professional independence based on scientific methods, rigorous quality criteria and the United Nations Fundamental Principles of Official Statistics. It could be said that **the value of official statistics, as compared to any other statistics or data, is “the difference induced by the Fundamental Principles of Official Statistics”**.

- **The quality assurance of official statistics is essential** for the recognition of their value and competitiveness, compared to other data sources, as well as a key element to increase the user’s confidence in them.
- All NSOs should establish a **Quality Assurance Framework**, available to users, within their organizations, in order to ensure the quality of the statistics they produce and disseminate.
- The NSOs should make a clear and concise quality statement that summarizes **how they implement the Fundamental Principles of Official Statistics**, thus guaranteeing the reliability and quality of the products they produce, in distinction from other data providers that do not apply these principles rigorously.

164. *Further recommendations relate to the generation and promotion of value, discussed in sections V and VI:*

- Begin with a firm focus on the customer/user and his/her needs
- Place stress on design of products and services to meet those needs, based on continuing innovation
- Invest in brand recognition and promotion so that those well designed and innovative services are well known and trusted
- In this way, generate beneficial outcomes and impacts on society...  
... which in turn are widely recognised as having added value.



Accordingly:

## 2. Recommendation - Put customers truly at the centre

165. We produce data and statistics as a service to users. **We need to listen deeply to users and be user-centred in everything we do** to unlock the benefits of our vast datasets. We need to understand and respond to the different needs of our users – some just want access to data and datasets, some want tailored analysis and some want tools to make the underlying data easier to understand.

- **Data is not the whole story.** We are best placed to provide the context to data by analysing our vast datasets to describe what is actually happening behind the statistical figure. We have what it takes to find fresh insights to data and reuse existing data sources in new ways.
- **We need to redefine our products and services to move away from bulk data provision** towards higher value products that correspond with what users truly need. Businesses are among the least satisfied users of statistics. We need to find out what kind of statistical services they really need. Decision makers use dashboards with headline indicators on a daily basis. They should have our apps providing the latest “headline statistics” ready for use.
- **We cannot simply say “no” to new trends and demands.** Ten years ago statisticians debated whether measuring sustainable development was part of our tasks or not. Now the SDGs are here and we need to measure them and help others to do so. We need to look at how our data can be used for analysing climate change, reducing vulnerabilities and building resilience.

## 3. Recommendation - Design statistics for everyday life

166. Many statistical offices already use distinctive design to give official statistics a look and feel of a branded product. **Design is much more than logos, typography and graphics – it is about keeping customers engaged with our statistics and improving their usability.**

- **Data are everywhere, statistics are not.** We should encourage open access to non-confidential statistics so that they can be used in various devices, apps and analytical tools by the private sector. We need to translate raw data into information and develop new kinds of products that people may use in their daily lives. Greater emphasis needs to be put on user-centred design and user friendly interfaces, and increasing the use of infographics, data visualization tools, stream of articles, social media posts and tweets. These services should be interactive to encourage feedback and development ideas from users.
- **Encourage design innovation and engage users in developing new products and services.** Use grants and competitions to create incentives for staff to come up with ideas for new designs to unlock the value of statistics. Set up catalyst projects to experiment with new thinking. Send your design innovations to open competitions to win awards from the media, the academia, the private sector or other stakeholders. Announce an award competition in statistics: statistical Olympics or “Hackathons” to invite programmers, software developers, graphic and interface designers and project managers to collaborate intensively on product development.
- **Users look for data points to answer their specific questions.** Too often statistics are presented in ways that are not easy to understand. Users no longer have the time to browse through massive data tables or printed publications. They are becoming impatient and are looking quick answers. We need to re-engineer access to statistical information, and consider, for example, creating “Stats engine” services to provide statistical figures as answers to users’ questions and develop the use of geospatial tools. Statistics should be repackaged and disseminated by topic, population group or geographic area rather than by data source or collection.

#### 4. Recommendation - Innovate to remain valuable

167. Finding the best ways to measure the changing reality requires constantly innovating – to power and underpin the well-designed products by which we stand or fall. While we want to maintain our traditions, long time series and quality standards, **we have to innovate at a faster pace than ever before** to maintain and increase our value to society.

- **Take the time to stop and think what we are really aiming at.** Statisticians are too busy with ongoing producing: collecting data, editing and compiling aggregates, creating tables and disseminating the results. Innovation is not only about technology, it is also about what we do and how we do it.
- **Make the best use of technological opportunities** stemming from the Data Revolution and Big Data. On one hand, we need to fully utilize the good methods and abilities that we already have, e.g. on nowcasting, assessing the accuracy, consistency and usefulness of the results produced from Big Data and incorporating the relevant digital data sources in statistical production to meet user demand, including the growing demand for real-time data. On the other hand, we should recruit and train staff for data analytics and data science and in using new data sources, technologies and applications. We can offer challenging work to analyse the widest range of statistical datasets together with digital data.
- **Invest at least 10% of working time in innovation and research.** We can no longer just maintain the status quo; we need to search for new solutions, ask questions, collect ideas, test them and evaluate them. We should not settle for trite answers. While we safeguard our traditional values and image, we should be curious about how to unleash the potential of statistics to improve lives. This could entail hosting “stats hack” sessions that bring together a diverse range of staff and other experts to create ideas for new products or improvements to existing products.
- **Consider and explore the evolving roles that NSOs should expect to fill. It will increasingly not be enough for NSOs just to produce statistics.** They will need, for example, to move towards become “knowledge factories”, if they are to be able to produce the information that decision makers need, combining statistics and other data sources and drawing out the implications. In another dimension, the reporting on SDGs, for one thing, will call for a strong coordinator of work, with NSOs reaching out to data producers they have not worked with before, and not just producing outputs on their own. In this sense, NSOs’ role in quality control, accreditation, standard setting and methodological guidance will become more prominent than before. Some statistical offices have already gone further and started the transformation into a “statistical data hub” that will offer a data management platform with access to all open data in the country.

#### 5. Recommendation - Go further with strategic partners

168. We work in strong partnerships in the statistical community and engage with data providers. The combination of tight budgets and rapidly increasing data needs, especially for the reporting on SDGs, calls for **seeking new partners to leverage expertise and add value**. If we fail to team up with the right partners, somebody else will step in to deliver on our behalf.

- **Partnerships with the private sector still represent a largely untapped source of innovation.** They could open access to source data that may replace or complement traditional surveys. Partnerships may enable access to new tools and technologies, design knowledge, product ideas, dissemination channels and networks. We should make our data available for use in new products of private companies, thus, increasing the reach of statistics.
- **Experiment with “Statslabs” and new models of international partnerships** within and outside the statistical community. For example, set up “Statslabs” with experts from statistical and

other offices to work in product and design development. This would help address resource constraints and spread new innovations by “copying and pasting”, thus, increasing our capabilities.

- **Look for, and make the most of, opportunities to influence stakeholders’ work.** For example, some statistical offices have worked with administrative data providers to adjust their data collection slightly to reduce direct business surveying or to modify their work in a manner that would allow the use of administrative data in a virtual population register to complement or replace the current head count census.
- **Get at the centre of decision making, making a reality of strategic partnerships with such users, whether in the public sector with policy making or resource allocation, or in private sector decision making.** We can do our jobs well only if we understand the issues facing decision makers and which the information we provide is intended to inform. Such involvement is in no way inconsistent with our professional integrity – to the contrary, it is an important part of our professionalism.

## 6. Recommendation - Build the official statistics brand and gain visibility

169. Excessive modesty about official statistics is dangerous. Like other industries, we need not only to generate value but to demonstrate and publicise that we are doing so. One element of this is **relentless promotion of the comparative advantages of our adherence to the Fundamental Principles of Official Statistics** characterized by high quality standards, professionalism, globally agreed methods, unwavering impartiality and credibility. More generally, brand recognition should be an explicit objective, based on the usefulness and quality of what we do and bolstered by concrete examples of the value of official statistics.

- **Be more assertive about our adherence to the Fundamental Principles of Official Statistics and the value that this generates.** This together with the reliability and quality that this endows in our products is a genuine comparative advantage that official statistics enjoys and we should exploit it as such
- **Promote and publicise how official statistics around the world has added value.** As previous sections and the annexes illustrate, there are many examples of where official statistics have generated value to societies and economies. Again, “hiding our light under a bushel” is not a virtue in this domain. Official statisticians should find means to publicise such successes, not least as a way of helping identify further instances of where official statistics could add value
- **All NSOs should formulate and implement explicit brand recognition and brand promotion strategies.** While the general precepts apply across all official statistics, the circumstances and conditions facing individual NSOs will differ. There are many but varying means by which NSOs can achieve greater brand recognition and visibility and individual NSO strategies could draw on these, as appropriate to their particular context.

*A further recommendation relates to the measurement of the value of official statistics, coming from the discussion in section VI.*

## 7. Recommendation – Measure outcomes to achieve greater impact

170. Statisticians measure almost everything except themselves. To have a greater impact on society and decision making, actions need to be taken along the lines of previous recommendations, but we will also need to measure our results and impact. Furthermore, this would itself help drive forward the agenda. **If we measure ourselves, we will be better able to prove our worth**, communicate with stakeholders and clarify our strategy.



- **Take steps to improve our knowledge of what our statistics are used for, and the impact that they can have.** Statistics should not just be produced for self-service. With the increasing supply of data available online, our users risk becoming less well known to us. If we do not know what we are needed for, we will fail in communicating our value. We should share examples which showcase how statistics are used in decision making and how they help people decide where to locate a business, what products to sell, where to build roads, schools and hospitals, and to know how families, women, men and children are doing, what is our quality of life, status of environment, economic conditions and performance. Why not write a series of articles on the uses of statistics, innovation, design and product development?
- **Take steps to cater for a wider and probably less informed range of users.** The range of users of official statistics is expanding, not just to include professional analysts, researchers and public officials but to embrace a wider range of citizens looking for data to inform their decisions. In itself, this is welcome but it also means the average user is liable to be less well informed. One consequence is that NSOs need to consider how to make their outputs and their implications more accessible – what was appropriate for expert users will not be so for less expert but nevertheless fully legitimate ones. Furthermore, NSOs should consider practicable steps, perhaps working with other agencies, to educate users in numeracy and statistical literacy.
- **A dashboard with indicators on the value of official statistics** would help us gain insights into where to invest to generate higher value. The metrics could include a mixture of measures of the economic value of official statistics and operational measures relating to user awareness, satisfaction, access to and use of official statistics. Stakeholder and partner surveys would be useful for identifying our weaknesses and strengths, and they could guide us towards partnerships that are more effective.

171. *One final recommendation on international work stems from discussion in many parts of previous sections. There is great value in NSOs learning and applying best practices, both from other NSOs but also from other organizations. Indeed, part of the purpose of this report is to assemble such examples of good practice.*

172. *But the world does not stand still. The phenomena that compete with official statistics are active and constantly changing. The challenges that a statistical office faces in one country will not necessarily be the same as the challenges faced by another statistical office in another country. Analogously, strategies to address these challenges that are successfully implemented may not necessarily apply, or be successful, in another statistical office.*

## 8. Recommendation – Establish and maintain a plug-and play platform

173. The official statistics' community needs an interactive and dynamic model **to implement the practical applications of the recommendations listed in the previous sections:**

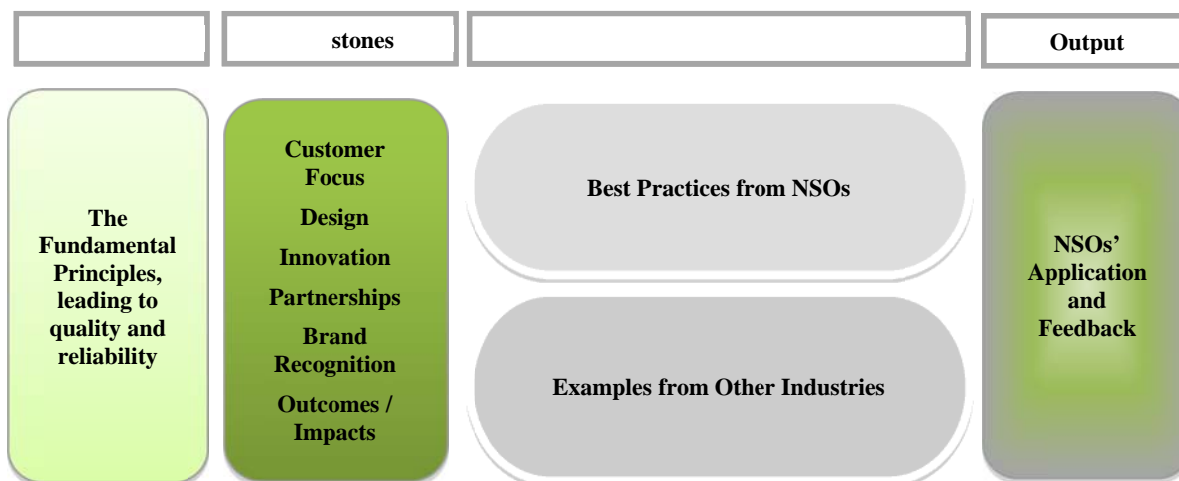
- The Task Force on the Value of Official Statistics proposes, based on the Practical Guidance on Applying the New Working Methods by the High-Level Group for the Modernisation of Official Statistics the **creation of an interactive “Best Practices Wiki”**. The Wiki would be a tool where the cornerstone comparative advantage and each of the milestones have a catalogue of best practices developed by NSOs or gleaned from other industries. This tool would allow interaction, permitting feedback and advice in real time. So NSOs would be able to pick up good practices to plug into the particular strategies relevant to their circumstances but would also be able to record their particular results and experiences for general use where appropriate.
- This “Best Practices Wiki” should be an **interactive and collaborative web-based platform** that would provide a communication channel in which information between NSOs could be exchanged and feedback received. A key feature would be recognition that other industries,

besides statistical offices, have successful strategies that addresses similar challenges, from which we can all learn.

- **A moderator should be appointed** to review the best practices and examples that are shared on the Wiki in line with a structure as described in the below tables.
- **The Wiki could be created on the UNECE platform** which already hosts a number of statistical working spaces. The moderator should be advised and assisted by a small group of experts.

Best Practices from NSO's	Examples from Other Industries
1. Short description.	1. Short description.
2. Objective.	2. Objective.
3. Resources needed for its implementation.	3. Results obtained.
4. Description of the implementation process.	
5. Results obtained.	

174. A simple model of the proposed logical structure of the Wiki would be as follows:



## Annex 1 Examples of the perceived usefulness of official statistics

In 2015 a UNECE survey on the Value of Official Statistics asked a cohort of international official statistics producers about the perceived usefulness of their outputs. The survey revealed many examples of the use of official statistics in evidence based policy and other decision making. Two good but characteristic examples are presented below.

### 1. The Irish Place of Work , School or College, Census of Anonymised Records ( POWSCAR)

The Irish POWSCAR data from the Census of Population 2011 has been extensively used by policy makers and analysts. The POWSCAR figures relate to the de facto Irish population on the night of Sunday, 10 April 2011. The date of the Irish census was chosen to coincide with a period when passenger movements were at a minimum and, consequently, the figures closely approximate to those for the normally resident population. The anonymised census records relating to persons at work and students who were enumerated and usually resident in Ireland were available to researchers<sup>10</sup>. Commuting patterns, policy analysis, interactive maps and visualisations were some of the outputs of the research<sup>11</sup>. The volume and variety of research conducted on the POWSCAR data clearly points to its use in informing policy decisions. POWSCAR sources traditional survey data.

The use of POWSCAR data facilitates an understanding of the functional area of the Gateway, to examine its economic reach and to ascertain how it is acting as a driver of growth based on its NSS-identified role<sup>12</sup> (NSS – National Spatial Strategy).

### 2. The Finnish micro-simulation model ELSI

This developed by the Finnish Centre for Pensions , uses administrative data and register data on pensions and earnings, combined with population and education data from Statistics Finland, to generate multi-faceted information on the effects that pension policies would have on individuals. The model specifically generates information on the income distribution effects of different pension

<sup>10</sup> ICOTS9 (2014) Invited Paper, Census of Population of Ireland 2011 Place of Work, School or College Census of Anonymised Records (POWSCAR) User Guide , Central Statistics Office, February 2013

[www.cso.ie/en/media/csoie/census/documents/powscar2011/Place.of.Work,.School.or.College.-Census.of.Anonymised.Records,\\_POWSCAR,\\_User.Guide.2011version2.pdf](http://www.cso.ie/en/media/csoie/census/documents/powscar2011/Place.of.Work,.School.or.College.-Census.of.Anonymised.Records,_POWSCAR,_User.Guide.2011version2.pdf)

<sup>11</sup> CSO POWSCAR Reports:

Census 2011 Profile 10 Door to Door – Commuting in Ireland, Central Statistics Office, December 2012

[www.cso.ie/en/census/census2011reports/census2011profile10doortodoorcommutinginireland/](http://www.cso.ie/en/census/census2011reports/census2011profile10doortodoorcommutinginireland/)

A sample of research and policy papers using POWSCAR:

[www.cso.ie/en/media/csoie/newsevents/documents/administrativedataseminar/2.40Spatial.Micro.Simulation.for.Education.Policy.Analysis.in.Ireland.ppt](http://www.cso.ie/en/media/csoie/newsevents/documents/administrativedataseminar/2.40Spatial.Micro.Simulation.for.Education.Policy.Analysis.in.Ireland.ppt)

<http://airo.maynoothuniversity.ie/external-content/travel2work>

[http://airo.maynoothuniversity.ie/sites/default/files/DestDublinCity-01\\_0.jpg](http://airo.maynoothuniversity.ie/sites/default/files/DestDublinCity-01_0.jpg)

<http://www.meath.ie/CountyCouncil/Publications/PlanningPublications/NavanMunicipalDistrictPlanningPublications/Archives/PreparationofVariationNumber1/LargerthanFourMBDownload.57146.en.pdf>

[www.nationaltransport.ie/wp-content/uploads/2011/12/Initial-Findings-from-Census-2011.pdf](http://www.nationaltransport.ie/wp-content/uploads/2011/12/Initial-Findings-from-Census-2011.pdf)

[www.wicklow.ie/sites/default/files/Draft%20Greater%20Dublin%20Area%20Cycle%20Network%20Plan.pdf](http://www.wicklow.ie/sites/default/files/Draft%20Greater%20Dublin%20Area%20Cycle%20Network%20Plan.pdf)

<sup>12</sup> Gateways Hubs Development Index 2012 A Review of Socio-Economic Performance Border, Midland and Western Regional Assembly Limerick Shannon Gateway Report, May 2013

[http://cua.ie/gorm/publications/PS\\_LimerickShannon\\_amended.pdf](http://cua.ie/gorm/publications/PS_LimerickShannon_amended.pdf)

systems, supporting policy makers to make informed decisions on pensions for different target populations. The Finnish micro-simulation model<sup>13</sup> uses survey and non-survey data sources.

Both these examples show the value of official statistics in policy making. The POWSCAR example demonstrates the added value of new technologies opening up traditional survey data with interactive maps, graphs and visualisations. The Finnish ELSI micro-simulation model shows the integration of different data sources, combined with statistical modelling to generate a powerful tool for policy makers.

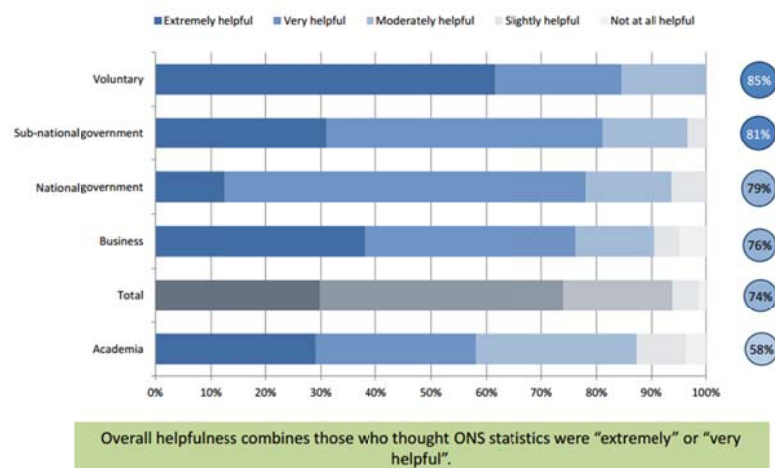
The same UNECE survey measured the value of official statistics, with questions on the quantitative and qualitative measures used to assess this value. Where the value of statistics was monitored there is in general an increasing positive trend in these indicators, particularly in media citations, trust in and usefulness of official statistics.

A typical example of the fruits of this survey was provided by the latest ONS Customer Satisfaction Survey report (2015)<sup>14</sup> 99% of respondents found ONS statistics and analyses to be helpful to some degree

This was by no means the only such example. So, not only are official statistics widely used, but, there is evidence to show that these statistics are helpful, too.

### The extent to which ONS statistics, analyses and advice have been helpful in providing an evidence base for policy and decision making

- 99% of respondents said that they had found ONS statistics and analyses to be helpful to some degree.
- 74% of respondents indicated that ONS were either “very” or “extremely helpful”.
- This is a new question for 2015, so there is no comparable data for 2013/14.



<sup>13</sup> Micro simulating Finnish earnings-related pensions May 2013. Heikki Tikanmäki, Hannu Sihvonen and Janne Salonen, Finnish Centre for Pensions, February 2014

[www.etk.fi/en/gateway/PTARGS\\_0\\_2712\\_459\\_770\\_3439\\_43/http%3B/content.etk.fi%3B7087/publishedcontent/publish/etkfi/en/julkaisut/research\\_publications/working\\_papers/microsimulating\\_finnish\\_earnings\\_related\\_pensions\\_7.pdf](http://www.etk.fi/en/gateway/PTARGS_0_2712_459_770_3439_43/http%3B/content.etk.fi%3B7087/publishedcontent/publish/etkfi/en/julkaisut/research_publications/working_papers/microsimulating_finnish_earnings_related_pensions_7.pdf)

<sup>14</sup> ONS Customer Satisfaction Survey 2014/2015, Office for National Statistics, [www.ons.gov.uk/ons/about-ONS/get-involved/consultations-and-user-surveys/satisfaction-surveys/ons-customer-satisfaction-survey/ons-customer-satisfaction-survey-2014-15-report.pdf](http://www.ons.gov.uk/ons/about-ONS/get-involved/consultations-and-user-surveys/satisfaction-surveys/ons-customer-satisfaction-survey/ons-customer-satisfaction-survey-2014-15-report.pdf)

## Annex 2 Key messages and slogans/banners used by individual NSOs

1. NSOs reported using the following **key messages or phrases** to demonstrate the value of their products and services in the UNECE survey:
  - In a world awash with information, the quality of data becomes its most important feature.
  - Official statistics are produced for understanding societies and, informing decisions at all levels from policy makers to businesses and individuals.
  - You have to have reliable data to be able to govern the country.
  - Our mission is to assist informed decision making, research and dialogue between all actors of society by producing and disseminating credible and trusted high-quality official statistics.
  - Our statistics are independent and we offer equal access to all.
  - Our statistics are reliable and calculated based on scientific approach with the use of advanced methodology applied across statistical services in the world.
  - Statistical data are reliable and provide a sound basis for analyses and effective decisions.
  - Statistics are the key of understanding the past, governing today and planning the future.
  - We are serving the country with high-quality statistical information that matters.
  - We emphasize the importance of statistics in everyday life.
  - We gather data on a wide range of topics such as income, housing, the environment, education and social well-being. This rich information helps people decide where to locate a business, what products to sell, where we need roads, schools and hospitals as well as measuring environmental progress, quality of life, how families are doing, and economic conditions and performance.
  - We provide the information necessary for making decision on the economy, social issues, the environment and public services.
  - Trusted statistics are essential for making good decisions in society, and we are the leading provider of these essential data in our country.
2. NSOs also reported using the following **slogans or banners** to promote their value:
  - AORTA: Accurate, objective, relevant, timely, accessible – US BLS
  - Better data, Better lives – UN General Assembly, used by a number of countries
  - Facing the future with knowledge – Finland
  - Facts that matter – Netherlands
  - Facts speak more than words – Armenia
  - For Decision Making – Colombia
  - Informed decisions – Estonia
  - Knowing México / We inform / Information for everyone / Things are changing all the time, and someone has to tell the story of what happens here...INEGI, Discovering Mexico – Mexico
  - No statistics no state – Tajikistan
  - Unleash the power of data to change lives – New Zealand
  - Statistics counts – Switzerland:
    - Statistics counts people, houses, cars, trees, etc.
    - Statistics counts on you - the people who fill out the surveys
    - Statistics counts for politicians, businesses, etc. because they help them in the decision making process

### Annex 3 Items and topics covered by NSOs' surveys and other monitoring of the perceived usefulness of outputs

In total, 90 per cent of statistical offices measure the value of statistical products and services with quantitative information. They reported using the following quantitative indicators in their user surveys or in other ways of obtaining feedback.

Google analytics or media monitoring	Office's own records
most cited statistics	number of agreements for chargeable services
most used statistics	number of completed requests for data
number of blog posts	number of contacts to the phone service
number of chat contacts	number of international data submissions
number of citations	number of international requests for statistics
number of data downloads	number of library visits
number of followers in social media accounts	number of news feed subscribers
number of retweets	number of publications sold/sent out
number of visits to the digital library	number of questions and answers to the office
number of website visits	number of stats Apps downloads
market value of the number of citations	number of trained journalists
	punctuality of statistical releases
	sales of information products and services
	timeliness of statistical releases

NSOs also reported monitoring the following issues by these means.

User surveys
accuracy of statistics
comparability of statistics
completeness of statistics
ease of access to statistics
ease of finding statistics
ease of understanding statistics
frequency of using statistics
importance of statistics for work
purposes for using statistics
quality of metadata
quality of statistics
quality of user support
reliability of statistics
satisfaction with chargeable services
satisfaction with mobile applications

satisfaction with technical aspects of the website
satisfaction with the content of the website
satisfaction with the visualisation tools
sufficiency of the release calendar
timeliness of statistics
trust in statistics/statistical office
use of official statistics in decision making
usefulness of statistics for work

## **Annex 4 Case studies of organizations' in other industries approach to generation and promotion of value**

Cases studies were assembled on the approaches used by the following 7 organizations or industries:

- Apple Inc – a company that designs, develops and sells electronics, computer software, on-line services, and personal computers.
- Amazon – an electronic commerce and cloud computing company.
- BMW – a luxury car producer.
- Google - a technology company specialising in internet-related services and products,
- Meteorological services – responsible for the provision of weather information and forecasts.
- UK Pharmaceuticals – develops, produces and markets drugs and pharmaceuticals for use in medications.
- JH Whittaker and Sons (Whittaker's) - a New Zealand confectionary company specialising in chocolate.

### **1. Apple Inc**

Apple Inc is a multinational technology company that designs, develops and sells electronics, computer software, on-line services, and personal computers. Its best known hardware products are the Mac line of computers, the iPod media player, the iPhone smartphone, the iPad tablet computer, and the Apple Watch smartwatch. Its online services include iCloud, the iTunes Store and the App Store. Apple's consumer software includes the OS X and iOS operating systems, the iTunes media browser, the Safari web browser, and the iLife and iWork creativity and productivity suites.

Founded in 1976, Apple is today the world's second largest information technology company by revenue, the world's largest technology company by Total Assets, and the world's third largest mobile phone maker. In 2014, Apple became the first US Company to be valued over \$700 billion. Today it employs 98,000 full-time employees, maintains over 450 retail stores in 16 countries, and operates the on-line Apple store and iTunes store, the latter of which is the world's largest music retailer.

Apple enjoys a high level of brand loyalty. According to the 2014 edition of Interbrand Best Global Brands report, Apple is the world's most valuable brand with a valuation of \$118.9 million.

Key features of how Apple delivers value are through its:

- Dedication to customer service
- Commitment to quality, innovation, design and simplicity
- People and culture
- Consistency and product integration



### ***Customer service***

Apple's whole culture is designed around delivering a superior customer experience. The company puts the customer at the centre of everything it does, from the design of its products through to the design of its retail stores. Generating customer value means building a business model that ensures that value is created repeatedly.

'At Apple our goal is to delight customers when they purchase a product and keep them happy through the life span'.

'We put ourselves in the customer's shoes'.

The company believes a high quality sales experience with knowledgeable salespersons who can convey the value of the company's products and services greatly enhances its ability to attract and retain customers. As such, Apple's employees are not just focussed on designing and selling products that will satisfy customers, but on providing a first class retail experience that delights shoppers. They make visitors to their stores feel appreciated and customers connected to more than just a transaction. They empower them by letting them play with the products and stay as long as they like. They make them aware that they are always welcome to come back for advice after their purchase.

Apple has invested in self-service tools that allow customers to schedule their own appointments and shop on-line. It is constantly evolving its store design to make it easier for customers.

The company's retail stores are typically located in high traffic locations in high quality shopping malls and urban shopping districts. By operating its own stores and locating them in desirable high-traffic locations, the company is better positioned to ensure a high quality buying experience and attract new customers.

### ***Commitment to quality, innovation, design and simplicity***

Apple is committed to producing quality products that 'change people's lives'. It believes that excellence comes from doing a few things and doing them well, rather than trying to be all things to all people.

'We believe that we are on the earth to make great products in markets where we can make a significant contribution'.

'We don't settle for anything less than excellence'.

Apple's products are the result of extensive research and strong design. It carefully considers what customers are looking for, including not only what they want now, but what they will need later. Whenever it releases a new product, customers trust that it will be attractive and easy to use, and will improve the way that they communicate, work and spend their leisure time.

The company believes in making complex things simple. The products have to be intuitive and easy to use. Apple proved that consumers would pay for music that they would otherwise obtain free from sites such as Napster, simply because the iTunes experience is that much simpler.

The principle of simplicity permeates Apple, from its products to the limited range on offer.

‘The popularity of Apple’s products is largely due to their simplicity and intuitiveness, making them accessible to tech-savvy consumers, but also to kids and seniors’.

Because the industries in which Apple competes are characterised by rapid technological advances, the company’s ability to compete successfully depends heavily on its ability to ensure a continual and timely flow of competitive products, services and technologies to the marketplace. The company continues to develop new technologies to enhance existing products and to expand the range of its product offerings through research and development.

### ***People and culture***

The people that Apple employs are very carefully selected and trained. The employees truly believe in what Apple is doing and are deeply entrenched in and committed to the customer’s experience.

‘Creating a successful business isn’t just about having a stand out product, true success ultimately comes down to having a team of stellar people’.

Apple pays a lot of attention to how culture is infused in its employees. Culture is what knits people together into a society that operates with a singular mission and focus. And, because Apple’s culture is based on a passionate commitment to delivering superior customer value, it has become not only the glue, but the engine that drives the company to even greater value.

‘Apple Campus is an exceptionally tight ship, full of driven individuals who are held to very high standards to make the next thing that everyone is going to be talking about’.

### ***Consistency and product integration***

All of Apple’s products have the same basic architecture. Because of this consistency, customers who already own Apple products know what they will be getting. Using the same architecture also facilitates ease of use of the products.

Apple products are designed to work together. They are part of an ecosystem that makes offerings more valuable. For example, the introduction of the iPhone was coupled with the opening of an on-line applications store.

### ***Value metrics***

Customer satisfaction metrics are an important way in which Apple tracks its value. The Net Promoter Score and American Customer Satisfaction Index are two key metrics that it uses.

The company also uses conventional financial metrics to monitor its performance. Examples include net sales and profits, net income, share of world-wide market etc

Innovation is monitored using measures such as percentage of revenue spent and R&D expenditure as a percentage of net sales.

## 2. Amazon

Amazon is an American electronic commerce and cloud computing company. It was born in 1995 as a place to buy books because of the unique customer experience the Web could offer book lovers. The name reflected the vision of Jeff Bezos, to produce a large scale phenomenon like the Amazon River. Just eight years later, Amazon passed the \$5 billion sales mark – it took Walmart 20 years to achieve this. By 2008, Amazon was a global brand with over 76 million active customer accounts and order fulfilment to more than 200 countries.

Amazon.com expanded to offer customers more types of products. It also offers platforms that enable third parties to sell products off its websites. Today, more than two million small businesses reach new customers by leveraging the power of the Amazon e-commerce platform.

Launched in 2006, Amazon Web Services (AWS) began exposing key infrastructure services to businesses in the form of web services – now widely known as cloud computing. Using AWS, businesses can take advantage of Amazon's expertise and economies of scale to access resources when their business needs them, delivering results faster at lower cost.

In 2007, Amazon introduced the first Kindle, the revolutionary portable e-reader that wirelessly downloads books, magazines, newspapers, blogs to a high-resolution electronic display that looks and feels like real paper.

### *Customer focus*

Amazon has made good customer service a cornerstone of the business. Jeff Bezos, the CEO, is a firm believer that what is best for the customer ultimately turns out to be best for the business. He has forced developers to focus on value delivered to the customer, instead of building technology first and then think about how to use it.

'Our vision is to be the world's most customer-centric company'.

'We are not competitor obsessed, we're customer obsessed. We start with the customer needs and we work backwards'

'If we can arrange things in such a way that our interests are aligned with our customers, then in the long-term that will work out really well for our customers and it will work out really well for Amazon'

'Focusing on the customer makes a company more resilient'.

Achieving customer loyalty and repeat purchases has been the key to Amazon's success. This focus on the customer has translated into excellence in service, with the American Customer Satisfaction Index, giving Amazon a consistently high score.

### *Innovation*

Amazon has a culture that encourages innovation. It believes that experimentation is imperative for inventiveness and innovation. Experimentation and willingness to invent is therefore a strong part of the culture.

‘If you double the number of experiments you do per year you’re going to double your inventiveness’

Bezos is a strong believer that innovation can only come from the bottom. He believes that everyone must be able to experiment, learn and iterate. He values it in his employees. He looks for people that like to invent and is always looking for ways to make products better.

‘Those closest to the problem are in the best position to solve it’.

‘The day we stop exploring is the day we commit ourselves to live in a stagnant world, devoid of curiosity, empty of dreams’

Amazon has created its own internal experimentation platform called ‘Weblab’ that it uses to evaluate improvements to its website and products.

Applying new technologies has been used to give Amazon a competitive edge.

‘All the effort we put into technology might not matter that much if we kept technology off to the side in some sort of R&D department, but we don’t take that approach. Technology infuses all of our teams, all of our processes, our decision-making, and our approach to innovation in each of our businesses. It is deeply integrated in everything we do’.

### ***Partnerships***

As Amazon has grown, it has formed partnerships with a range of companies in different sectors. Examples include Drugstore.com (pharmacy), Living.com (furniture), Pets.com (pet supplies), Wineshopper.com (groceries), and Kozmo.com (urban home delivery). In most cases Amazon purchased an equity stake in these partners, so that it would share in their prosperity. It also charged them fees for placements on the Amazon site to promote and drive traffic to their sites.

Amazon has been able to consolidate its strength in different sectors through its partnership arrangements and through using technology to facilitate product promotion and distribution via these partnerships. The Amazon retail platform enables other retailers to sell products online using the Amazon user interface and infrastructure through their ‘Syndicated Stores’ programme. For example, in the UK, Waterstones is one of the largest traditional bookstores. It found competition with online so expensive, that eventually it entered into a partnership arrangement where Amazon markets and distributes its books online in return for a commission online. Such partnerships help Amazon to extend its reach into the customer base of other suppliers, and customers who buy in one category such as books can be encouraged to purchase into other areas such as clothes and electronics.

Another form of partnership is the Amazon Marketplace which enables Amazon customers and other retailers to sell their new and used books and other goods alongside the regular retail listings. A similar partnership approach is the Amazon Merchants@ program which enables third party merchants to sell their products via Amazon. Amazon earns fees either through fixed fees or sales commissions’ per-unit. This arrangement can benefit customers who get a wider choice of products from a range of suppliers with the convenience of purchasing them through a single checkout process.

Amazon has also facilitated formation of partnerships with smaller companies through its affiliates programme.

### ***Metrics***

A common theme in Amazon's development is the drive to use a measured approach to all aspects of the business. The company has a culture of metrics. Each site is closely monitored with standard service availability monitoring, site availability and download speed. It also monitors per minute site revenue upper/lower bounds.

At Amazon, 'automation replaces intuitions' and real time experimentation tests are always run to answer questions since the actual consumer behaviour is considered the best way to decide upon tactics.

Amazon uses around 500 metrics to track its performance, around 80 percent of which are related to customer objectives. They include measures such as percentage of orders from repeat growth, growth in the number of customer accounts. Amazon also uses the ASCI to benchmark itself against other companies.

### **3. BMW**

BMW is a luxury car producer and is seen as one of the most prestigious, stable and admired companies in the world. It continues to be one of the best players in the luxury automobile industry. It believes in excellence in everything it does: service, product quality, customer relationships, and product and brand recognition. BMWs goal is to be a leading provider of premium products and premium services for individual mobility.

Long-term thinking, strong investment in research and development, ecological and social responsibility in the value chain, and an effective speed and agility in responding to changes in the market are some of the reasons for BMWs success.

### ***Brand recognition***

Brand has had a strong impact on BMWs performance. Brands are characterised through consistent quality, craftsmanship, recognisability, exclusivity, reputation, distinctive variation, timing, and heritage. The key to BMWs success is consistency and authenticity of their marketing strategies and policies. With such a strong brand, the company has been able to earn some of the highest margins in the industry.

### ***Design and quality***

Design and quality are strong points behind BMWs success. BMW achieves a higher quality of engineering than is usual in production cars. While most car assembly has been taken over by robots or workers from low wage economies, BMW maintains a skilled labour force, and employs double the number of workers than any other company in the automobile industry. It puts the product before anything else and is deeply committed to that principle.

The tradition of quality permeates all work processes of the company. A comprehensive, multi-level management system ensures quality in all work processes, as well as components and materials, and

ultimately its products. Above all, BMW orients its quality management system to the needs of its customers.

‘Customer oriented thought and action is part of corporation philosophy and anchors our goal of achieving perfect results in all manufacturing areas. Our employees’ attitude to quality from the very beginning, continuing along the entire process chain, prevents mistakes and ensures continual improvement’.

### ***Innovation***

Innovation is an integral part of BMWs product development. It spends around 25% of its profits on research and development. Innovation enables the company to keep at the forefront in a competitive environment.

BMW's continued success is its strategic focus on developing customer friendly innovations, coupled with an approach to innovation management which is unique within the automobile industry. One of its keys is a constant focus on the culture of innovation – making professional innovative processes a strategic and cultural constituent of every area of the company.

This focus on culture is a guiding principle within BMW. It ensures that all departments in the organization are focused on innovation, including sales and marketing, human resources and product development.

Everyone working for the company, from the factory floor to the design studios to the marketing department, is encouraged to speak out.

‘Ideas bubble up freely, and there is never a penalty for proposing a new way of doing things, no matter how outlandish’.

BMW's management structure is flat, flexible and entrepreneurial. This helps innovations to be developed quickly to improve internal processes and for the marketplace.

The company uses cross-functional teams which are more effective at problem solving. This lateral ability to communicate across divisions and silos, facilitate speedier innovation.

The German car maker has always been able to respond to the attacks of its competitors with an increasingly level of technology and innovation that characterises its products.

### ***Customer focus***

BMW uses customer profiling to understand its customers. It goes beyond pure demographic statistics and carefully tracks the personalities, lifestyles and tastes of its customers. The information is used across all areas of the business, from the design and development of the cars, through to the premium pricing of all elements of the marketing mix. BMW is very clear about its targeting. It only targets the premium priced cars and does not strive to compete with every segment of the auto industry. It avoids the high volume market of middle of the road vehicles and focuses strictly on the luxury sector. BMW is an example of excellent consumer research, matched to segments that were targeted by very suitable and successful cars.

‘That means having a clear understanding of customer behaviour and recognising trends’.

‘A company must know what the public wants and maintain a keen interest in the relationship with their customers and value their thoughts. That’s why BMW is where it is today, so far ahead of the others.’

‘What it really needed

BMW understands the importance of making the purchase of one of its cars a special experience for the customer. The sales associate spends as much time as it takes for the purchaser to understand how to operate their new car. It’s all about the customer and the car and making the customer feel special. The BMW staff are passionate about the brand and what it stands for.

### ***Partnerships***

BMW has used partnerships to help maintain a competitive edge in the market. For example, it partnered with Clemson University to build a multi-million dollar International Centre for Automobile Research in South Carolina, US.

‘What it really needed was a specialised talent funnel – students with graduate level training in automotive engineering with an emphasis on integrating the smart systems emerging in the industry’

Located on the Clemson University International Centre for Automobile Research campus, the Information Technology Research Centre (ITRC) is an integral part of BMWs research and development network. It provides an important platform within the BMW Group for joint innovation projects with leading IT companies in the US. At the ITRC, mechanical, electrical and computer engineers and students - from BMW, the IT industry and the university - work together in an open innovation model on proof of concept and pilot projects where IT innovations push automotive solutions forward.

BMW is exploring deeper partnerships with software computer companies, such as Apple. It recognises that future generation cars cannot be built without more input from telecoms and software companies and is aware that Apple has been studying how to make a self-driving electric car. Both companies would need to profit from the cooperation or it will not last.

### ***Metrics***

BMW uses satisfaction measures to monitor performance.

The company undertakes regular assessments of customer satisfactions following sales and services. It also commissions market research to gauge customer satisfaction.

BMW has also strived for recognition of its value by using external evaluations and taking part in award competitions. The company has undertaken the EFQM assessment and won the EFQM Excellence award in 2013. The award is organized once a year and is designed to recognise Europe’s best-performing organizations, whether private, public or non-profit. It recognises industry leaders with an indisputable track record of success in turning strategy into action and continuously improving their organization’s performance.

#### **4. Google**

Google is a multinational, publicly traded organization, built around the company's hugely popular search engine. Google search is the most used search engine on the world-wide web, handling more than 3 billion searches each day. It was originally developed by Larry Page and Sergey Brin in 1997. Its use is very simple and provides the best search results of all search engines.

Google is today one of the most valuable brands in the world. The success of Google is directly connected to the efforts of the company to fulfil its mission statement and vision statement.

Its vision is to 'provide access to the world's information in one click'.

Its mission is to 'organize the world's information and make it universally accessible and useful'.

Ever since its beginnings the company has focused on developing proprietary algorithms to maximise effectiveness. It continues to focus on ensuring that individuals can access the information they need.

#### ***Brand recognition***

The Google brand is very simple and has resulted in a very large number of customers who interact with the brand very often. Like Apple, Google has achieved brand success by getting huge splashy press every day. Google continues to get into the news by having a large number of consumer-facing products that are constantly updated. Google has asserted its branding images on its own websites, on mobile, on TV and in movies. Being aggressively global and appealing influential groups has also been important to the success of the brand.

#### ***Customer experience***

Product decisions at Google are driven by optimising for the user experience first and for revenue second. The company firmly believes that the better the user experience, the more easily the money will follow.

"Worry about the money later, when you focus on the user, all else will follow"

'Create a great user experience and the revenue will take care of itself'.

'Since the beginning, we've focused on providing the best user experience possible. Whether we're designing a new internet browser or a new tweak to the look of the homepage, we take great care to see that they will ultimately suit you, rather than our own internal goal or bottom line. Our homepage interface is clear and simple, and pages loaded instantly.'

A huge part of Google's success can be attributed to the push from 'Marissa Mayer' to implement the user experience of Google, which can be summarised in one word – simplicity. The simple homepage, common-sense research function and digestible search page layout made Google and immediate go to for finding information fast and reliably.

At Google, software developers are taught that the best products 'include only the features that people need to accomplish their goals.'

'Scores of design features in every Google product have been refined based on user logs'.



‘Expect any product rolling off the line to have some association with bettering the user experience behind their search algorithm. No matter if that’s building stronger ties through information gathered on Google Plus, product receipts that hit Gmail, or even the hours of cat videos you watch on YouTube, it all leads to a better graph connecting searchers to the results that matter most to them’.

### ***Design***

Google made design a priority in 2011. To ensure that it could compete with Apple’s tech cachet, Google’s products had to be well designed.

‘If designed poorly, new-fangled interactions can be jarring, unsettling, even scary.’

Today, Google produces better designed software than any other tech company. Unveiled last year, Material Design, Google’s evolving language for mobiles, tablets and desktops – offers consistency in interactions, invisible rules that govern everything, so that every app feels familiar, and beauty in service and function.

‘Our goal is to design everything so that it is beautifully simple’.

‘Larry has raised the bar for everything that we do in design...Everything now has design as a fore element’.

‘Each product should have an intuitive, simple and beautiful design that delights users each time they visit.’

### ***Innovation***

Google has used innovative strategies to maintain its leadership in the industry. Each year it invests hundreds of millions of dollars in technology and research and development projects. It is investing more than its rivals and because of this, it provides more products to people than any other tech company. Examples of its products are Gmail, Google maps, Chromebook, Glass and Nexus.

At Google, employees are given 20 percent of their work time to pursue projects that they are passionate about, even if they are outside of the core job or core mission of the company. Many wind up as products or product improvements.

Eight principles have guided innovation by Google:

- Have a mission that matters: Google has a simple mission that is used to guide all of its decisions. It makes sure that all its employees feel connected to it and empowered to help achieve it.
- Think big but start small – ‘No matter how ambitious the plan you have to roll up your sleeves and start somewhere’. ‘The notion of “10x thinking” is at the heart of how we innovate at Google: true innovation starts when you try to improve something by 10 times rather than by 10%’.
- Strive for continual innovation, not instant perfection – ‘Early in Google’s history we released some of our products as “beta launches” and then made rapid iterations as users told us what they wanted more (and less) of. Today we continue to listen carefully to user feedback after each launch and revise products based on what we hear. The beauty of this approach is that you get real world user

feedback and never get too far from what the market wants.’ ‘The first version of AdWords released in 1999, wasn’t very successful – almost no one clicked on the ads. Not many people remember that because we kept iterating and eventually reached the model that we have today. And we’re still improving it; very year we run tens of thousands of search and ads quality experiments, and over the past year we’ve launched over a dozen new formats. Some products we update every day’.

- Look for ideas everywhere – ‘At Google we believe that collaboration is essential to innovation and that it happens best when you share information openly. ‘As leader of our Ads products, I want to hear ideas from everyone – and that includes our partners, advertisers, and all of the people in my team’.
- Share everything – ‘by sharing everything you encourage the discussion, exchange and re-interpretation of ideas, which can lead to unexpected and innovative outcomes’
- Spark with imagination, fuel with data – ‘We try to encourage blue sky thinking through 20% time – a full day per week during which engineers can work on whatever they want. Looking back at our launch calendar over a recent 6 month period, we found that many products started life in employees’ 20 percent time’. ‘Data ... can either back up your instincts or prove them totally wrong’. ‘At Google data is a big part of every choice we make. We test and measure almost everything we do so that we have a continuous data stream to inform decisions’.
- Be a platform – ‘There is so much awe-inspiring innovation being driven by people all over the globe. That’s why we believe so strongly in the power of open technologies. They enable anyone, anywhere, to apply their unique skills, perspectives and passions to the creation of new products and features on top of our platforms’.
- Never fail to fail – ‘People remember your hits more than your misses. It’s okay to fail as long as you learn from your mistakes and correct them fast. Trust me, we’ve failed plenty of times. Knowing that it’s okay to fail can free you up to take risks. And the tech industry is so dynamic that the moment that you stop taking risks is the moment you get left behind’

### ***Metrics***

Google uses the American Customer Satisfaction Index (ACSI) to benchmark its performance against other companies.

## **5. Meteorological services**

Meteorological offices provide the public with the information they need to make informed decisions to protect their health, safety and security in the face of changing weather and environmental conditions. Accurate and timely forecasts and warnings are also critical to the optimum functioning of the economy, where many industries including agriculture, energy production, transportation and forestry are directly affected by weather conditions.

Optimising the use of weather and climate information requires an active partnership between the producer and consumer of meteorological services. It is clear that reliance on simply providing the best weather forecast or climate outlook is not sufficient. Meteorological information acquires value through its influence on the decisions of the users of that information. It is used to reduce uncertainty and improve economic and other decisions.

‘Information about the weather only has value insofar as it affects human behaviour’.

‘A weather forecast only has value if it can be used to make decisions that yield attractive benefits to users’

Meteorological offices deliver value include by enabling better informed decisions which reduce risks and increase opportunities. They achieve this by:

- ***Tailoring products and services to customer needs*** - the need for different types and levels of detail of weather information is dictated by how the information is to be applied. Meteorological offices are increasingly seeking to build better partnerships with customers who utilise their products and services, so that they can better understand the extent and shape of their needs and tailor products and services to meet those needs. The driver behind this service concept is ensuring that people and institutions are positioned to act on the information provided and make ‘smart’ decisions and build resilience in communities. Most meteorological offices do not have the extensive capacities to meet all of their customer needs, and must therefore be selective around where they will be able to deliver most value.
- ***Ensuring information is accessible*** – good communication and dissemination of weather and climate information is an intrinsic element in maximising the overall benefit – or value – of weather information to society. The benefit of weather information to society is only maximised when the greatest number of people receive the information and act upon it when making decisions.
- ***Building awareness of the value of meteorological information*** – promoting a better understanding of the valued role of meteorological offices in reducing loss of life and economic damages, and the benefits of improved use of meteorological services. In this way it raises awareness of the opportunities that weather and related information offer. A growing number of meteorological offices are attempting to promote a better understanding of the value of weather and climate information to society and the economy through calculating a monetary estimate of the value of the information. For example, it has been estimated that weather variability accounts for as much as 3.4% of GDP in the USA. Most studies tend to focus on a particular sector, such as agriculture or transport.
- ***Research and development*** – to better understand meteorological and climatological cycles and their impacts, and develop new or improved products and services.
- ***Partnerships*** – increasingly weather offices are forming partnerships with academic institutions and software companies to improve their efficiency and impact. For example, in the UK the Met Office has established a Met Office Academic Partnership to bring together the Met Office and institutions that are among the UK leading universities in weather and research (Universities of Exeter, Oxford, Leeds and Reading) to tackle key challenges with weather prediction. The aim of the collaboration is to draw together world class expertise around a focused programme of research to tackle key challenges in weather and climate science prediction; and to maximise the return on the UK’ investment in research and development in its leading research institutions.

In the UK, the Met office is also working in partnership with the oil and gas industry to enhance its weather forecasting. Weather data reports obtained from over 104 oil and gas platforms and mobile installations across the North Sea in real time, enable forecasters to predict and analyse weather patterns more accurately and provide bespoke forecasting advice. ‘Helimet is an internet-based weather data network originally designed to share data between UK installations and helicopter operators. This

collaboration is a great example of how cutting edge data technology, driven by the oil and gas industry can be of great value to other areas. Helimet uses a network of automated weather stations located on offshore oil and gas platforms and mobile installations. They provide detailed reports of cloud, visibility, and weather in some instances, information on wave conditions. These data are fed into a network allowing more accurate definition of the weather across the North Sea, an area prone to adverse weather conditions. 'Helimet makes a significant contribution to the Met Offices ability to accurately monitor and provide weather advice. Accurate guidance is critical to the safe and efficient operation of not only the oil and gas industry but also the wider offshore renewables, shipping and aviation activity.'

In NZ, Metservice invested in MetOcean, a leading NZ oceanographic services company helping maritime and offshore industry clients to improve decision making and improve operational efficiencies. In NZ close commercial partnerships have been instrumental in bringing new weather services to the public. For example, the Metservice Marineapp has been designed in partnership with Maritime NZ and the Metservice Snow weather app which includes vital information about road and ski conditions was developed jointly with the Department of Conservation.

### ***Metrics***

Meteorological offices are increasingly seeking to quantify the value of weather information in monetary terms. The main ways they use to estimate the value of forecasts are by:

- Modelling of decisions, with and without forecasts, and of the expected consequences of these decisions (eg for agriculture, electricity generation, fisheries etc)
- Using surveys to obtain value estimates
- Using data from actual events ie observed weather phenomena with and without forecasts or warnings (eg use of observational data for valuing hurricane and heat wave warnings)

## **6. The United Kingdom's Pharmaceutical industry**

The pharmaceutical industry develops, produces and markets drugs and pharmaceuticals for use in medications. It is subject to a variety of laws and regulations that govern the patenting, testing, safety, efficacy and marketing of drugs.

Pharmaceutical companies deliver value through:

- ***Undertaking research and development*** – this enables the development of new and innovative medicines for patients, across a huge range of diseases and conditions, which make an essential contribution to the health and wellbeing of the population. Medicines developed by the pharmaceutical industry have helped to change the healthcare landscape through the prevention or cure of previously life-threatening diseases, such as HIV and AIDS.
- ***Contributing to efficiencies and savings*** – many chronic conditions place a huge economic burden on society through employee absenteeism and lost productivity due to illness; the long-term medical, in-patient hospital and surgical costs associated with late treatment and disease; the significant cost to the National Health System through disability; and the societal costs associated with illness. Appropriate use of medicines can deliver patient benefits and consequent cost savings.

- ***Making a vital contribution to the economy*** – by most measures the pharmaceutical sector is Britain's most successful research-based industry. For example, Gross Value Added (GVA) per employee in the industry is significantly higher than high and medium-tech sectors such as chemicals, motor vehicles and computer products. Over the past decade the industry has consistently generated a large trade surplus for the UK, and its contribution to the balance of trade was the third greatest of nine major industrial sectors.
- ***Being a source of highly skilled jobs*** – the industry employs around 73,000 people directly in the UK, almost a third of which are in highly skilled research and development roles. In addition, the industry generates thousands of jobs in related industries, such as the biotechnology, medical technology and diagnostics industries.

### ***Metrics***

The pharmaceutical industry in the UK uses Gross Value Added (GVA) to measure the contribution of the industry to the UK's national income. To measure the GVA the value of output generated by the industry is calculated and from this the cost of goods and service involved in production is deducted.

The UK pharmaceutical industry also tracks the return from pharmaceutical innovation on a regular basis. Two key measures are used: static internal rate of return (IRR), which provides a yearly 'snapshot' of returns performance, and dynamic returns, which provides a year-on-year assessment of the key drivers of changes in IRR over time.

Other measures that are used to assess the value of the industry are:

- Sales of prescription medicines
- Retail and Producer price indices for pharmaceutical products
- Pharmaceutical industry's contribution to the trade balance
- Employment in the pharmaceutical industry
- Pharmaceutical industry's contribution to improving health outcomes

### **7. Whittaker's**

JH Whittaker's & Sons Ltd (Whittakers) is a New Zealand confectionary company specialising in chocolate. The company controls its entire manufacturing process, calling itself a 'bean to bar' manufacturer. It has been a family-owned business since 1896, with third-generation family members still the sole shareholders in the company.

Whittaker's has built a strong culture around the brand. In 2011, it was listed as New Zealand's third most trusted brand by a Readers Digest survey. It improved its standing to first in 2012, and retained this standing in the next four consecutive years.

Key aspects of how Whittaker's delivers value include:

- ***Brand recognition*** – the brand provides premium quality at an affordable price. It is recognised as being trustworthy and reliable, and for consistently delivering a strong experience in terms of

product quality, variety, price and availability. Whittaker's have used the same label designer since 1984.

- **Quality** – the company is dedicated to only using ethically-sourced ingredients of the highest quality. It is committed to ensuring quality by undertaking the whole production process in the manufacture of its products, and investing in good quality equipment. “It's a core company value that we will never compromise on’.
- **Innovation** – Whittaker's is constantly seeking to surprise and delight customers by producing new flavours and products. For example, it recently introduced a new artisan range of chocolate with ingredients sourced from New Zealand artisan producers.
- **Collaborating with other companies** – the company has shown a keenness to advance itself by collaborating with other company's products where there is a link to chocolate. For example, it produced a co-branded ice-cream product ‘Lewis Road Creamery Chocolate Milk Drink’ that has attracted a huge consumer following. It has also entered into partnerships with commercially successful brands like L&P and Jelly Tip. ‘The collaboration of two desirable boutique brands that have a loyal following – so it appealed to the fans of each brand and it appealed to the kiwi origin.’
- **Communications/marketing** – Whittaker's have made smart use of communications channels, especially social media, and have invested heavily in paid media like television.

### **Metrics**

Whittaker's has been listed the most trusted brand in the Readers Digest Survey of most trusted brands for the last four consecutive years. The company has increased its market share with every year it has been voted the most trusted brand

## Annex 5 Partnerships which NSOs have formed or with which they are involved

In a UNECE survey carried out in 2014, NSOs reported some 57 partnerships which they had set up or in which they were involved, in 25 different countries. They are described below under the headings:

- Partnerships with stakeholders
- Partnerships through engagement activities
- Partnerships to leverage Big Data
- Crowdsourcing arrangements

### 1. Partnerships with Stakeholders

#### (a) With the public sector

Partnerships with the **public sector** are carried out through bilateral or multilateral agreements at the national or international level. They contribute to official statistics by supporting data acquisition, advancing statistical business processes, and developing information technology infrastructure, tools and software. These partnerships increase the value of statistics by supporting existing programs and addressing data gaps.

Partnerships are also crucial for the coordination of national administrative data. A prevalent theme among statistical agencies is to reduce response burden by taking a whole-of-government approach to data collection and production, including the sharing of government-held data to reduce duplication.

In **Finland**, the majority of statistics produced is based on data from registers and other administrative sources. **Statistics Finland** also developed a microsimulation model in partnership with several other government departments. The model is a calculation tool for modelling personal taxation and social security legislation. This initiative led to a significant increase in data usage, as well as interaction and communication with researchers.

In Australia, the **Australian Bureau of Statistics** and the **Australian Taxation Office** work together to reuse government-held data. Benefits of the partnership include reduced red tape and burden on the community through the reuse of government-held data and improved data for use by other agencies through ABS–ATO collaborative development work. The organizations also share expertise and experiences (e.g., big data analytics and taxonomy) and, a share infrastructure to further reduce the burden on the community and leads to more efficient data collection by the government (e.g., the ABS's adoption of standard business reporting).

In **Mexico**, INEGI segments the users in five sectors: social, public, private, academic and media. For each sector INEGI has different partnership strategies to promote cooperation at different stages of the statistical process. To develop methodologies, user input is obtained during public consultation and meetings with key users. To develop products and services, INEGI uses different mechanisms like customized training programs for different users (university students, researchers, businessman, etc.).

Since 2009, **Mexico** has implemented a system of collegiate bodies, called Consultative Boards, for the participation and consultation of the public, academic, private and social sectors, responsible for review, recommend and advise INEGI on issues related to the needs and satisfaction assessment, dissemination and promotion of statistical and geographical information. For example, since 2011, Mexico has implemented a permanent communication campaign on radio and television to advertise its statistical and geographical products and services to stakeholders.

Concerning its partnerships with the public sector, INEGI has an agreement with the Ministry of Education, which directs national education for elementary and high school students, to include statistical and geographical information in all the available channels, such as text books, computer programs and videos. At the same time, INEGI offers a dedicated section on the institutional INEGI website. Since 2012, The Ministry of Education has included INEGI content in 60 education documents and adapted 30 computer programs as learning objects to improve student retention and comprehension. Also, in coordination with this Ministry, INEGI conducted a census of administrative records (CEMABE) to collect information on schools, teachers and students of basic and special education.

In **New Zealand**, environmental reporting is undertaken by Statistics New Zealand in partnership with the Ministry for the Environment. This partnership arrangement is made explicit in the Environmental Reporting Act 2015. The involvement of the Government Statistician ensures that reporting is conducted at arm's length from the Government of the day and released in line with the principles and protocols for Tier 1 statistics.

Internationally, data exchanges between statistical agencies are long standing. For example, an international data-sharing agreement between the **U.S. Census Bureau** and **Statistics Canada** related to import statistics has been in place since 1987. Bilateral governance meetings take place twice a year to discuss production schedules and changing requirements. This data exchange has helped to improve the quality of trade statistics and has reduced the burden on respondents.

(b) With the private sector

Partnerships with commercial organizations are likely to become more prevalent as statistical agencies venture into Big Data and crowdsourcing . In most cases, private sector partners are both data providers and data users. Many organizations see significant benefits from taking a collaborative approach.

For example, the **US Bureau of Economic Analysis** (BEA) has been using private sector data in its estimation processes for at least 15 years. In collaboration with the **US Census Bureau**, it has recently reached an agreement with a major credit card company to allow researchers to evaluate the usefulness of credit card transactions in the production of economic statistics. Tabulations from the project, along with modelled estimates produced by the credit card company, will allow BEA to evaluate the quality of the existing annual estimates of consumer spending by state and to investigate the feasibility of producing consumer spending estimates by county.

The **Croatian Bureau of Statistics** has entered into a support agreement with a major software company to provide information technology services. The agreement provides three main categories of services: reactive services, proactive services and a direct relationship with the private company through a dedicated resource (a technical account manager). Reactive services ensure that critical issues that could



affect the business systems are addressed with the highest priority by the private company. Proactive services ensure that systems are running according to industry standards and best practices. Actively monitoring IT health and addressing risks helps to lower the probability of system downtime and ensures that business systems are running at the expected service levels.

Since 2010, **Mexico's** INEGI has been working on a key engagement strategy called "INEGI AT THE HAND"—a no-cost program that links the institute with strategic segments of society, public, private, social and media organizations. The program has a national presence in order to meet the training, consulting and special requirements of strategic data users, and includes an option to access INEGI's statistical and geographical information tools. Strategies were also developed to give users full interaction and a feedback channel to allow INEGI to fulfill its statistical mandate and, at the same time, to let users know how the information they provide is in their own benefit. Adding value is a way to customize products to meet users' needs and expectations. As a result of this program, more than 290 cooperation agreements have been signed with strategic users and 19,785 individual users have received training.

Since 2013, **Mexico's** INEGI has a Collaboration Agreement with Google in which INEGI granted a non-cost license for the exploitation and use of its cartography to Google and, in exchange, the credit to INEGI is given in all Google Maps' national products.

#### (c) With civil society

The civil society sector is instrumental in promoting local economic development, alleviating poverty, advocating policy change, contributing to good governance. Partnerships with civil society foster better response rates from the business sector, which will translate into better quality data, thus increasing the value of official statistics. Moreover, the use of official data among key decision makers adds credibility and augments the public trust necessary for statistical agencies to function.

Examples of partnerships illustrate collaboration on statistical business processes and for data acquisition, as well as for funding purposes, knowledge sharing and exploring of strategic issues.

**Statistics Austria** and the **Austrian Chamber of Commerce** have had a formal co-operation agreement in place for many years under the direction of a high-level steering committee. The defined co-operation areas relate mainly to business statistics and to minimizing the burden on enterprises. The committee's main tasks are to discuss strategic issues relating to business statistics, exchange information relevant to the each partner and collaborate to prepare new or amend existing legislation. Day-to-day tasks and issues are addressed bilaterally: ad hoc working groups cover more complex issues, and advisory boards address strategic decisions beyond the scope of the high-level steering committee. One of the future challenges will be the implementation of the Framework Regulation Integrating Business Statistics, which requires a new national legal basis. Meet this challenge requires ongoing discussions between Statistics Austria, the Austrian Chamber of Commerce and other stakeholders.

**Statistics Netherlands** and the **Netherlands Organisation for Applied Scientific Research** have conducted for many years a joint survey on working conditions, commissioned by the **Netherlands Ministry of Social Affairs and Employment** (and with many other important users). When the formal partnership agreement was renewed, it was expanded to include all themes of common interest, with an

emphasis on innovative approaches, including a joint search for external funding. Since the new agreement was signed in April 2015, over 20 new ideas were explored.

With initial funding from the **Ewing Marion Kauffman Foundation**, the **U.S. Census Bureau** developed the Business Dynamics Statistics program, which provides annual statistics on establishment openings and closings, firm start-ups and shutdowns, employment, job creation and job destruction from 1976 to 2012, by firm (or establishment) size, age, industrial sector, state and metropolitan area status. The program has received additional support from the Small Business Administration. In 2015, the Kauffman Foundation provided partial funding to the U.S. Census Bureau to establish an annual survey of entrepreneurs, which would collect data more frequently than the quinquennial Survey of Business Owners. A clear benefit of partnering with the Kauffman Foundation is the funds it provides, as well as the feedback received from the Kauffman Foundation's network of experts.

d) With the academic community

Partnerships with academia are carried out to support fundamental and applied research, facilitate microdata access, promote the use of analytical tools, influence academic curricula, establish joint professorships and share knowledge. They contribute, among others, to substantially increase the availability of public-use data files and improve access to official statistical data.

Several national statistical agencies have partnered with universities to extend their capabilities and improve their data-gathering practices. **Statistics Austria**, **Statistics Finland** and **Statistics Netherlands** have all established formal partnerships with universities and research institutes. These partnerships are making data available to university researchers through online platforms. **Statistics Austria** has created a new website offering several standard data sets, along with corresponding metadata and all necessary technical information to the Vienna University of Economics and Business. Any researcher can submit a research proposal and apply for registration, which allows him or her to download a suitable standard dataset. If none of the standard datasets are suitable, an offer to produce a tailored dataset is made.

**Statistics Austria** has also introduced an initiative at the secondary school level. The agency offers courses on statistical literacy and organizes a "Statistics Day" for schools once or twice a year. School classes and teachers are invited by Statistics Austria to attend short lessons on various statistical topics. These events reach around 100 to 200 high school students and their teachers every year, far exceeding expectations. **Statistics Finland** has organized joint professorships with Finnish universities, previously with the University of Helsinki and the University of Tampere, and currently with the University of Helsinki. The disciplines have included statistical methods and national economics, in which experts from the agency have participated both as students and as tutors and teachers. The main benefits of these joint professorships for Statistics Finland are in methodological developments, the development of staff competencies, the development of theses based on relevant topics, the improved use of statistics and statistical data by students, and a lively interaction and communication with students. These students are potential future statisticians and users of statistics. In addition to the professorships, some joint courses in national economics have been organized, in which experts from Statistics Finland have participated both as students and as tutors and teachers.

**Statistics Canada** has developed two key programs to serve the research needs of qualitative researchers. The Data Liberation Initiative (DLI) substantially increases the availability of public-use microdata files

for researchers at Canadian universities by providing a cost effective program for improving access to over 350 survey cycles at 79 postsecondary institutions.

Established in 2000, the Research Data Centres Program complements the DLI by extending the social science research capabilities in Canada to include access to a broad range of confidential data files that could not be placed in university libraries or other non-secure locations for public access. These files are available to researchers with approved projects in secure **Statistics Canada** facilities at university campuses across Canada. Among its benefits, the program greatly enhances the relevance of Statistics Canada data by increasing their use and serves as a platform for training quantitative researchers. This access program is managed as a collaborative partnership between Statistics Canada, Canadian universities and Canadian research funding agencies, which form the Canadian Research Data Centres Network. Annually, the program provides services to over 1,500 researchers, and the level of activity continues to grow. By 2014, more than 4,300 researchers had analyzed information on a broad range of socioeconomic and health issues and had produced over 3,000 publications since the inception of the program.

(e) With multiple stakeholders

In many cases, a large number of different stakeholders are involved in partnerships. Examples include partnerships carried out for data acquisition; the development of IT infrastructure, tools and software; and statistical business processes. These partnerships are instrumental in advancing access to the data community, helping maximize the re-use of data and ensuring that historic data remains available for research in years to come.

In **Turkey**, house sale statistics have been produced with the collaboration of the **Turkish Statistical Institute** (TurkStat) with the **General Directorate of the Land Registry and Cadaster**. TurkStat works in close cooperation with real estate organizations to determine their data needs, revises the database to satisfy new requirements and collaborates closely with the General Directorate of the Land Registry and Cadaster to ensure the quality of data.

After developing Blaise—a powerful and flexible system used for computer-assisted survey processing—**Statistics Netherlands** created the Blaise Corporate License Users Board (called B-CLUB) to gather feedback on the Blaise software that is used worldwide to produce official statistics. The main goal of B-CLUB is to create a platform to exchange information on Blaise and to give large users of Blaise the opportunity to influence its development. Through these exchanges, Blaise has become a more robust and comprehensive software.

**Statistics Canada** often partners with other organizations to improve survey response. For example, the agency will be conducting a Survey of Energy Consumption of Arenas, 2014, on behalf of another government department. The survey will collect detailed information on energy demand and consumption patterns of Canadian arenas. To encourage survey participation, Statistics Canada is partnering with hockey associations. Through this collaboration, Statistics Canada hopes to obtain a significant increase in data response.

## **2. Partnerships through engagement activities**

Engagement activities help to accomplish various goals, such as encouraging respondent participation, gaining support from influential bodies, showcasing the value of official statistics and promoting their use by giving access to data and tools, and offering training and support. They also strengthen existing relationships. This type of collaborative partnership is a powerful tool to encourage the use of official statistics.

Considering its respondents as partners, **Statistics Austria** has successfully reduced the response burden through the use of other data sources, customized electronic questionnaires with numerous features for assistance, extensive survey-related explanations on the website, and the establishment of hotlines for technical and content-related support.

The **U.S. Census Bureau** developed an evergreen national partnership program. The new program was built on the success of the 2010 Census and continues to develop and foster relationships with national organizations, federal agencies and businesses. For example, during the 2015 Census Test, an initiative was undertaken to show how partnership efforts translate on a local level. The National Partnership Office has also continued to work very closely with many of the national partners from the 2010 Census by providing webinars, briefings, presentations and interactive workshops targeted to the specific audience.

**Statistics Canada** uses a variety of activities to engage data users and the public in strategic partnerships that will benefit both parties. Some of these activities include a monthly blog post (*StatCan Blog*), a quick qualitative survey (*Question of the month*) that gives a voice to users, live online sessions (“Chat with an expert”) where members of the general public can question an expert on a specific topic, as well as social media venues like [Facebook](#) and [Twitter](#). This user participation allows Statistics Canada to better understand Canadians’ data needs, to make data accessible and readily usable, increasing thus the value of official statistics.

Since 2013, **Statistics Canada** has hosted *Talking Stats: A discussion series with StatCan* in cities across Canada. Participants meet the Chief Statistician of Canada, who presents major statistical findings about a particular aspect of the Canadian society or economy. Each presentation is followed by a discussion with a panel of experts. This partnership with specialists from various sectors allows for an in-depth discussion about observed social and economic phenomena—truly demonstrating the value of official statistics.

## **3. Partnerships to leverage Big Data**

The advent of Big Data with its potential impact on the core business of statistical organizations signals the logic of partnership models, and that they may be the only way forward. Due to the uncertainty, complexity, velocity and size of Big Data, many statistical offices form partnerships in design, analysis, and technology with academia, research institutes, technology providers, data consumers, data privacy protectors, businesses, etc.

These partnerships have multiple advantages, among which is the interaction value—the intangibles that derive from the processes of partners working together, for example, reputation, trust, relational capital, learning, knowledge, joint problem-solving, communication, coordination, transparency, accountability, and conflict resolution. These intangibles project a positive perception and credibility among respondents and the general public.

The **United Kingdom’s Office for National Statistics (ONS)** initiated a Big Data Project that includes four pilot projects that cover economic and social themes using different data sources (Internet price data, Twitter messaging, smart-meter data and mobile phone positioning data). Nine stakeholder groups have been identified for the project: privacy groups, ONS, international stakeholders, academia, the private sector, big-data companies, technology providers, government and data users (including the public). Engagement activities and communications are designed to engage data users and the public to understand their concerns with the use of big data in official statistics and their requirements for new types of outputs. By engaging with external stakeholders, ONS able to learn from their experience and acquire their data, tools and technologies for use in pilot projects, develop ONS knowledge and skills, coordinate efforts, and develop partnerships to work collaboratively. By engaging with internal stakeholders, ONS ensures the project’s objectives align with ONS strategic objectives and ensures coordination and support for the project across ONS, as well as managing stakeholder expectations at various stages of the program.

At **Statistics Canada**, a pilot project used data from smart meters to track residential electricity consumption and compare those data with survey data to evaluate the potential for using Big Data to replace or supplement the survey data. The results showed that smart meter data can be more accurate, timely, relevant and coherent than the survey data, and could be used to supplement the existing survey to improve Statistic Canada’s household electricity consumption statistics.

#### **4. Crowdsourcing partnerships**

Crowdsourcing is a low-cost partnership that produces timely and relevant data. It also unites diverse resources and people, helping organizations to innovate and achieve better results. It can be used to locate and assemble information, analyze existing information, seek help to find an empirical solution, and evaluate public taste or public support.

For *The National Map* crowdsourcing case study, the **United States Geological Survey (USGS)** of the US Department of the Interior launched a call for public volunteers in the state of Colorado to register online and then collect and edit data about public buildings. Using an Internet mapping application, volunteers helped the USGS update *The National Map* by correcting or adding information about structures and facilities such as schools and fire stations. The pilot study showed that volunteer information improved data on structures.

In **Mexico**, INEGI has been analyzing tweets to assess their usefulness in three specific subject areas: subjective well-being, tourism and mobility statistics. Through a partnership with a university, the project employs university students to classify the content of tweets in a way that is currently more accurate than using automated algorithms. This approach is not only an innovative way of collecting and processing data, but has also an educational value.