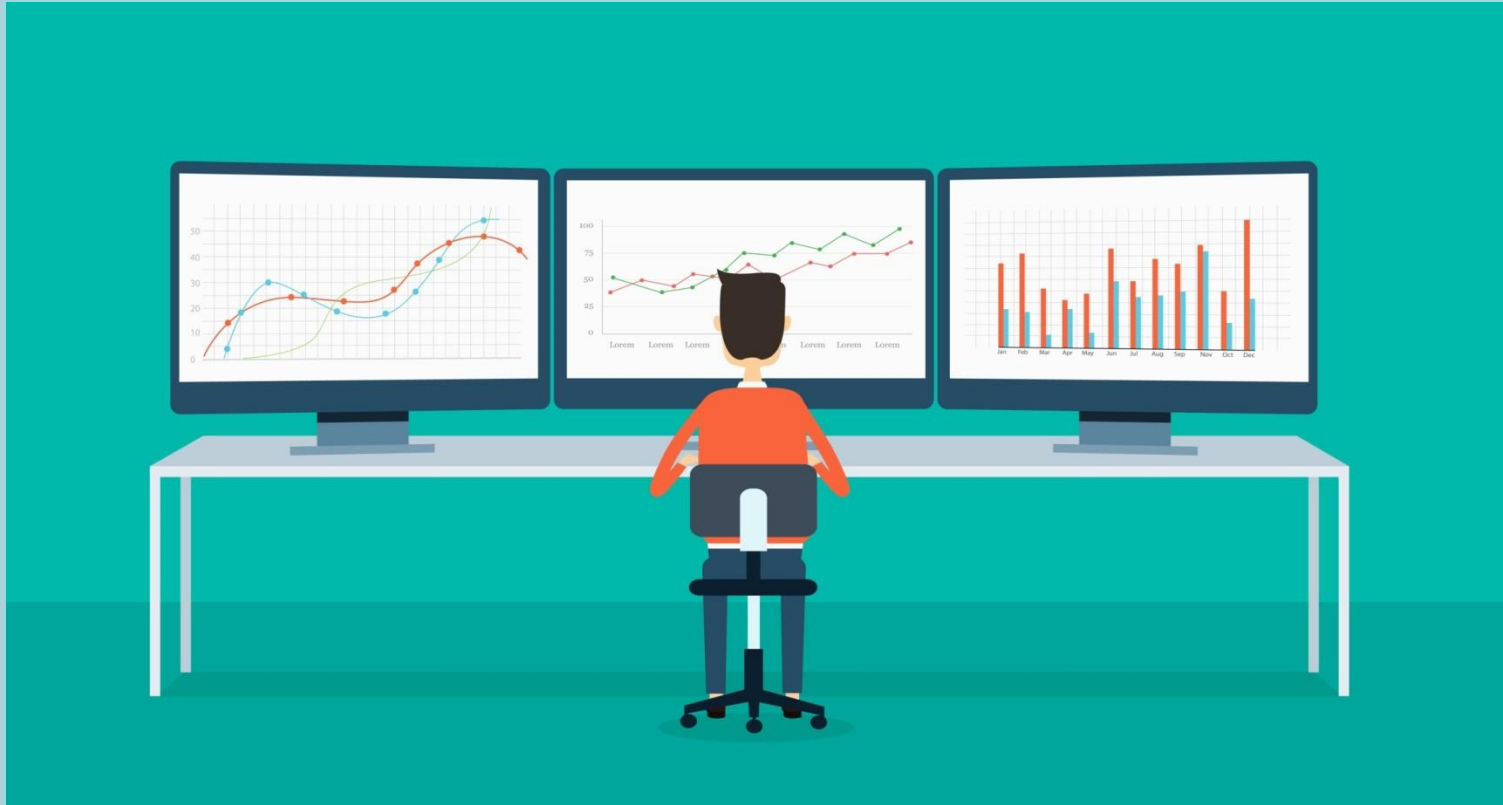




Statistical Training Framework based on the GSBPM





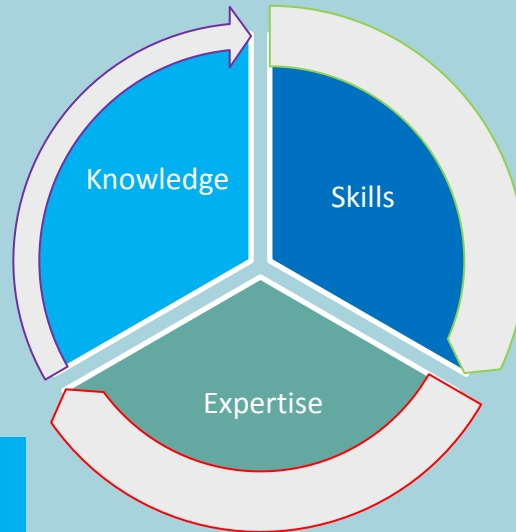
Content of Presentation

- Summary of **Statistical Training Framework**
- **Framework Design**
- What the **Framework will measure**
- Why the **GSBPM Model?**
- **Key Benefits** of the Framework
- Possible **uses** of the Statistical Training Framework
- **Training Interventions** the IRISH EXAMPLE
- **Communities of Practice**



Summary

- Ireland's Central Statistics Office (CSO) is currently developing a Statistical Training framework with input from the UNHGLG TT on Capabilities which will align:



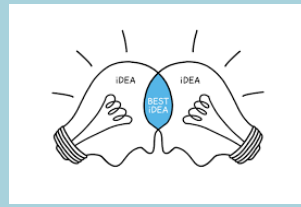
For each role within a Statistical Organisation

Framework designed in line with GSBPM model





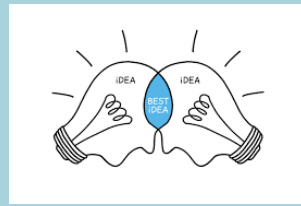
Design of the Framework



- **Working group** set up, comprising of internal subject matter experts & Learning & Development professionals
- **A number of one day workshops (brainstorm), focus groups, presentations, Q&A sessions etc**
- Resulted in concise model **13 high level headings**
- **Model outlines final headings and assigns them inline with the GSBPM model**
- The **UNHLG-MOS** has prioritised the importance of this work and are working with the CSO on developing the model



Design of the Framework



- Currently identifying levels at **Basic, Intermediate and Advanced**
- Also reviewing **Training Interventions and Communities of Practice (Ireland)**



Creation of a Statistical Training Framework

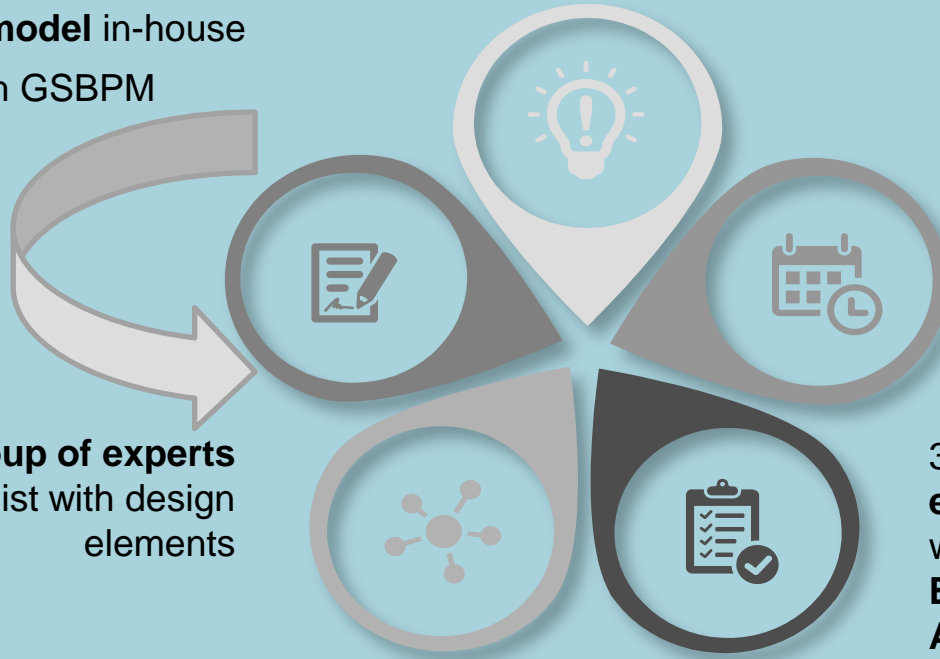
1. Design **Statistical training model** in-house in line with GSBPM

5. CSO Ireland working on a programme of training interventions

4. **Skills register** will be updated and skills gaps identified, learning paths can be formulated from these.

2. **Working group of experts** set up to assist with design elements

3. Will write up descriptors for each statistical skill heading with requirements set out as **Basic, Intermediate and Advanced.**



Statistical Framework – Skills Headings

								<i>Statistical Framework</i>	
<i>GSBPM</i>									
Specify Needs	Design	Build	Collect	Process	Analyse	Disseminate	Evaluate	<i>TOPICS</i>	
								Data Governance	Ireland
								Fundamental Statistics (Introduction to Statistical Training)	Ireland
								Regulatory Statistical Frameworks (eg IESS, FRIBS)	Ireland
								1. Register Management	No one identified at present
								2. Sample & Estimation	Ireland- Completed
								3. Survey & Questionnaire Design	Ireland- Completed
								4. Imputation and non-response	External academic assistance & UNECE TT on Capabilities
								5. Statistical Data Editing	UNECE TT on Capabilities
								6. Evaluating user statistical needs	No one identified at present
								7. Index Numbers	Ireland- Completed
								8. Regression	Ireland- Completed
								9. Time Series Analysis & Seasonal Adjustment	Ireland- Completed
								10. Statistical Disclosure control	External academic assistance
								11. Visualisation and Presentation of Data	No one identified at present
								12. Data Matching, Integration and Administrative Data	External academic assistance
								13. National Accounts	iStat have agreed to assist.



Example of a Descriptor: Including levels Basic, Intermediate & Advanced

Index Numbers

Basic:

- I understand how index number theory is used in official statistics in the production of some common indices e.g. the Consumer Price Index.
- I can compare common algebraic methods of index number calculation including the Lespeyre's and Paasche's methods.
- I am aware of issues that arise when comparing prices between different time periods, and some practical solutions to these.
- I understand the theoretical background to rebasing indices.

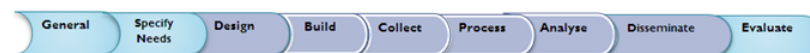
Intermediate:

- I know the steps to take to rebase a fixed base series.
- I understand and can apply different techniques that can be used to chain link rebased series.
- I understand the issues with calculating aggregate indices from elementary ones e.g. weighting etc.

Advanced:

- I understand the different approaches to calculating the cost of living index.
- I understand the advantages and disadvantages of the various elementary price index number formulae i.e. the Dutot, Carli and Jevons indices.
- I am aware of different issues that exist when measuring price changes in the context of significant quality change, and some common approaches.
- I understand some advanced techniques in time series analysis, including hedonic price indices. Superlative indices, the axiomatic versus the economic approach, the utility function and the difference between cost of living and cost of goods indices.
- I can apply these advanced techniques to index number problems in official statistics using appropriate software.

Where do Index Numbers skills fit into GSBPM model? (high-lighted in Purple)





Learning Interventions?

- Identify relevant training interventions under each heading.

Learning paths for
Official Statisticians

Formal Training



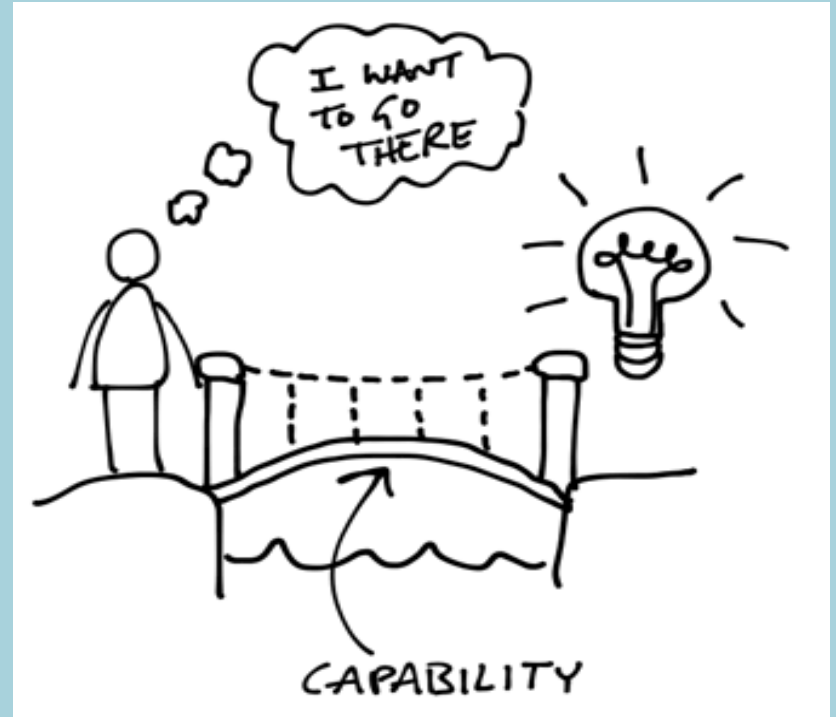
In house designed
courses

Coaching, Mentoring &
on the Job

elearning, Webinars,
Knowledge
Management systems

What will the Framework measure?

- **Statistical Capability**
- Essential Statistical Infrastructure
- Deliver an **enhanced statistical skillset**
- Ensuring Statisticians have the relevant **knowledge, skills and expertise** to work effectively
- Assist with **Mobility policies**
- **Identify skills gaps & strenghts** in Statistical Organisations





Skills Register

Staff Member

Completes the Skills Register based on Skills Heading and Descriptors
(Statistical Framework)

Statistical Role Specification

Identify Skills levels for specific **role** using Skills Headings and Descriptors
(Statistical Framework)

Overlap Skills Register for Individual with Skills levels for Specific Role

Skills gaps and strengths identified



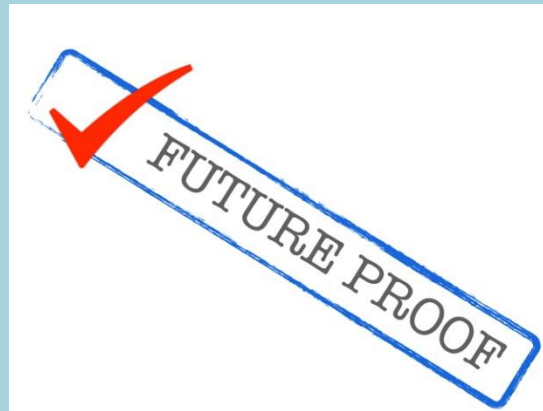
Why the GSBPM model?

- Describes and defines the **set of business processes** needed to produce official statistics
- It provides a **standard framework**
- **Harmonised terminology** to help statistical organisations to modernise their processes
- It was selected as a **high European standard for processing meta-data** & it's components



Why the GSBPM Model

- A recent survey carried out by the **UNECE** indicate that over 85% of all NSIs will use the **GSBPM model** in their organisations in the near future



Why the GSBPM Model?

- The Survey also highlighted the importance of the GSBPM in the standardisation of statistical business processes.



“Increasing the understanding of statistical business processes”

“Increasing understanding of description and assessment of statistical business processes. ”



Key Benefits of the Framework

Organisational	<p>Better quality statistics, increased output, higher retention rates, upskilled workforce, and knowledge databases.</p> <p>Innovative work force, better staff engagement, continuous learning culture, aps and Strengths identified, Effective Workforce Planning (right people, in the right place at the right time)</p>
Employee	<p>High work performance, self-rated skills assessment, knowledge of key statistical processes, career paths, learning paths, increase in expertise.</p>
Manager	<p>Aids with workforce planning, skills gaps are easily identified, on the job training becomes more transparent and quicker to identify and increased efficiency. Improved performance management.</p>
Cost efficiency	<p>Cost effective measures, in house expertise utilised for training, training interventions booked in advance leading to group rate discounts, strategic planning for training budgets, easy to see where money is spent and return on investment.</p> <p>Gaps identified and more focused training interventions. Workforce Planning, use of current resources (right people, right place, with the right skills).</p>



The Statistical Training Framework can be used for a number of purposes

- Integral part of **strengthening NSIs overall capability** - will measure **statistical capability based on the GSBPM**
- Align training across all statistical processes with GSBPM
- Identify gaps in statistical levels in organisations but also across the wider NSI
- Assist NSIs in Workforce Planning
- Allow Management Board to identify
 - Where training is taking place
 - Where over training is happening
 - Where undertraining is happening



The Statistical Training Framework can be used for a number of purposes - contd

- Allow NSIs to develop clear learning paths for staff through effective delivery of statistical training interventions
- Assist with decision making on the Mobility of Staff
- Provide staff with greater understanding of the range of statistical skills, knowledge and expertise linked to GSBPM
- Maturity Model could be developed to assess where NSIs are with regard to training and the GSBPM

The result?





CSO Training Interventions

- Link to Universities and Modular Programme
- Access to ESTP Courses
- Compiling a programme of training interventions under the following:
 - Classroom Based
 - eLearning
 - On the job
 - Self-directed learning
- Fundamentals in Statistics
- CSO 15 staff experts in their areas, trained to deliver
- Communities of Practice



Fundamentals in Statistics

Week 1. Data Summaries & Graphs

Week 2. Statistical Models

Week 3. Sampling Distributions

Week 4. Simple Comparative Experiments

Week 5. Counted Data

Week 6. Cross-Classified Frequency Data

Week 7. Introduction to Regression

Week 8. Introduction to ANOVA



Communities of Practice

Domain

Communities of Practice are **groups of people who share a concern or a passion for something that they do and who interact regularly to learn how to do it better.**

Community

Practice



Benefits of Communities of Practice



- **Connecting people with common interests** results in stronger relationships and networks
- **Facilitating knowledge exchange**
- **Greater access to ideas & awareness of new developments**
- **Reinvigorating and innovating practice:**
 - Members solve problems,
 - Build arguments
 - Improve how people think collectively
- **Mapping knowledge** and practices relating to the domain
- This can **identify gaps** and help seek out new information
- Continually **growing capability** and community confidence
- Members help each other and **create new experiences**
- **Attracting and retaining talent**, attention and growing support.



Key Outcomes:

- 60 (13) Statistical Headings
- Linked to the GSBPM
- Skills Levels (Basic, Intermediate & Advanced)
- Statistical Skills Register
- Training Interventions
 - Fundamentals in Statistics
 - ESTP
 - Formal Training
 - eLearning etc
 - COP

Key Benefits:

- Identify Statistical Capability linked to GSBPM
- Identify Gaps & Strengths
- Focused Training
- Mobility
- Identify Over and Under training
- Clear Learning and Career Paths
- Workforce Planning
- Better quality statistics
- Increased output
- Higher retention rates
- Upskilled workforce



Thank you

