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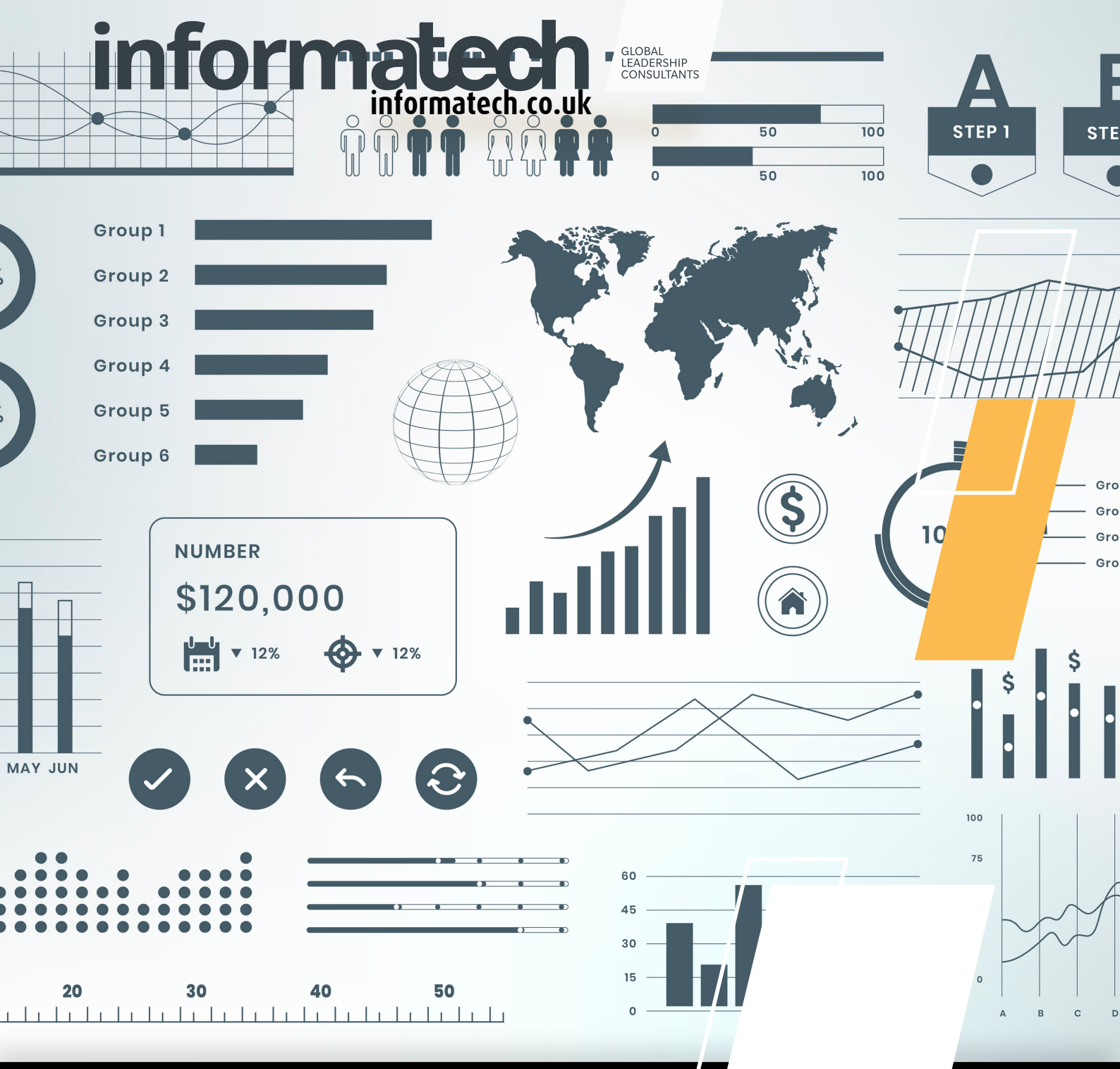

Info-Graphics Data Analysis And Reporting Techniques

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ACS REGISTRARS ISO 29990 | ACS REGISTRARS ISO 9001 | ilm Approved Centre | PMI Registered Education Provider Project Management Institute | bci Business Continuity Institute Corporate Partnership

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Course content

Introduction

Corporate ethos which demands continual improvement in work place efficiencies and reduced operating, maintenance, support service and administration costs means that managers, analysts and their advisors are faced with ever-challenging analytical problems and performance targets. To make decisions which result in improved business performance it is vital to base decision making on appropriate analysis and interpretation of numerical data.

Objectives

This training seminar aims to provide those involved in analysing numerical data with the understanding and practical capabilities needed to convert data into information via appropriate analysis, and then to represent these results in ways that can be readily communicated to others in the organisation.

Objectives include:

To provide delegates with both understanding and practical experience of a range more common to analytical techniques and representation methods for numerical data
To give delegates the ability to recognize which types of analysis are best suited to particular types of problems
To give delegates sufficient background and theoretical knowledge to be able to judge when an applied technique will likely lead to incorrect conclusions
To provide delegates with a working vocabulary of analytical terms that will enable them to converse with people who are experts in the areas of data analysis, statistics and probability, and to be able to read and comprehend common textbooks and journal articles in this field
To introduce some basic statistical methods
To explore the use of Excel 2010 or 2013 for Data Analysis and the capabilities of the Data Analysis Tool

Training Methodology

The training course adopts a problem-based learning approach, in which delegates are presented with a series of real numerical data analysis problems drawn from the widest possible range of applications ± from engineering to finance and from logistics to quality control.

Each problem presents and exemplifies the need for a different data analysis approach. For reasons of time constraint it will not be possible to develop solutions during the training course to all of the problems posed. Nevertheless, all delegates will be given comprehensive solutions to all of the problems, to take away with them at the end of the training course, as future learning resources.

The training course is entirely applications-oriented, minimizing the time spent on the mathematics of analysis and maximizing the time spent on the use of practical methods in Excel, along with the understanding why such methods work.

Delegates will spend almost all of the time exploring Excel© data analysis and representation functionality, including the Data Analysis Tool Pack, to investigate the totally realistic data analysis problems.

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Organisational Impact

Organisations that are able to make optimum decisions will enhance their ability to compete on the global stage. The participants on this training course, and therefore the teams that they work within will, as a result of their training, be better positioned to influence the organisation with recommendations based on objective data analysis that in turn produce a higher performing business.

Individuals exposed to this training will develop new insights to the usefulness of Excel and the field of data analysis, and they will learn why the best companies in the world see data analysis as being essential to delivering the right quality products and services at the lowest costs.

Personal Impact

Participants will gain an understanding and practical experience of a range of the more common analytical techniques and data representation methods, which have direct relevance to a wide range of issues. The ability to recognize which types of analysis are best suited to particular types of issue will be addressed, and delegates will be given sufficient background and theoretical knowledge to be able to judge when an applied technique will likely lead to incorrect conclusions.

Who Should Attend?

The training course has been designed for professionals whose jobs involve the manipulation, representation, interpretation and/or analysis of data. Familiarity with a PC and in particular with Microsoft Excel (2003, 2007, 2010 or 2013) is assumed.

The training course involves extensive computer-based data analysis using Excel 2010 and therefore delegates will be expected to be numerate and to enjoy working with numerical data on a computer.

Seminar Outline

The Basics

Sources of data, data sampling, data accuracy, data completeness, simple representations, dealing with practical

Fundamental Statistics

Mean, average, median, mode, rank, variance, covariance, standard deviation, ™lies, more lies and statistics∫, compensations for small sample sizes, descriptive statistics, insensitive

Basics of Data Mining and Representation

Single, two and multi-dimensional data visualization, trend analysis, how to decide what it is that you want to see, box and whisker charts, common pitfalls and

Course content

Data Comparison

Correlation analysis, the autocorrelation function, practical considerations of data set dimensionality, multivariate and non-linear Histograms and Frequency of Occurrence

Histograms, Pareto analysis (sorted histogram), cumulative percentage analysis, the law of diminishing return, percentile analysis

Frequency Analysis

The Fourier transform, periodic and a-periodic data, inverse transformation, practical implications of sample rate, dynamic range and amplitude

Regression Analysis and Curve Fitting

Linear and non-linear regression, order; best fit; minimum variance, maximum likelihood, least squares fits, curve fitting theory, linear, exponential and polynomial curve fits, predictive

Probability and Confidence

Probability theory, properties of distributions, expected values, setting confidence limits, risk and uncertainty, ANOVA (analysis of variance)

Some more advanced ideas

Pivot tables, the Data Analysis Tool Pack, internet-based analysis tools, macros, dynamic spreadsheets, sensitivity

Introduction and Descriptive Statistics
What is data analysis
A reminder of elementary statistics
A quick-start tutorial for Excel
Describing data sets using statistics
Representing data sets graphically
How to create infographic in Excel
The normal distribution
Mini-Case studies

Frequency and Time Series Analysis

Frequency of occurrence
Histograms
Pareto analysis
Pivot tables and pivot charts
Creating Excel dashboard
Trending data
Estimation theory
Mini-Case studies

Course content

Scenario Analysis, Confidence and Six Sigma

Modeling scenario
Interactive spreadsheets
Confidence intervals
Control charts
An Introduction to Six Sigma
Error bars
Mini-Case studies

Regression Analysis Equations and System Modeling

Simple regression analysis
Curve fitting
Describing data using equations
Prediction
Modeling single input single output systems
Modeling multiple input single output systems
Constraint optimization using Solver
Mini-Case studies

Correlation Analysis and Anova

Differences between data sets
Correlation analysis
Analysis of variance (ANOVA)
Mini-Case studies
Overall review of concepts learned and how they can be applied in practice

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About informatech GLOBAL LEADERSHIP CONSULTANTS

informatech is a global leadership consultancy that aligns people, purpose & strategy - driving socially responsible transformation in global organisations. Our international network includes 215 partners, consultants, and coaches in 24 countries throughout Europe, North America, Latin America, Asia, and Africa. We transform leaders, align teams and create resolve and passion to win. Typical interventions are to accelerate performance, execute strategy and embed capability and change.

For more information about informatech GLOBAL LEADERSHIP CONSULTANTS or to get in touch, visit us at:

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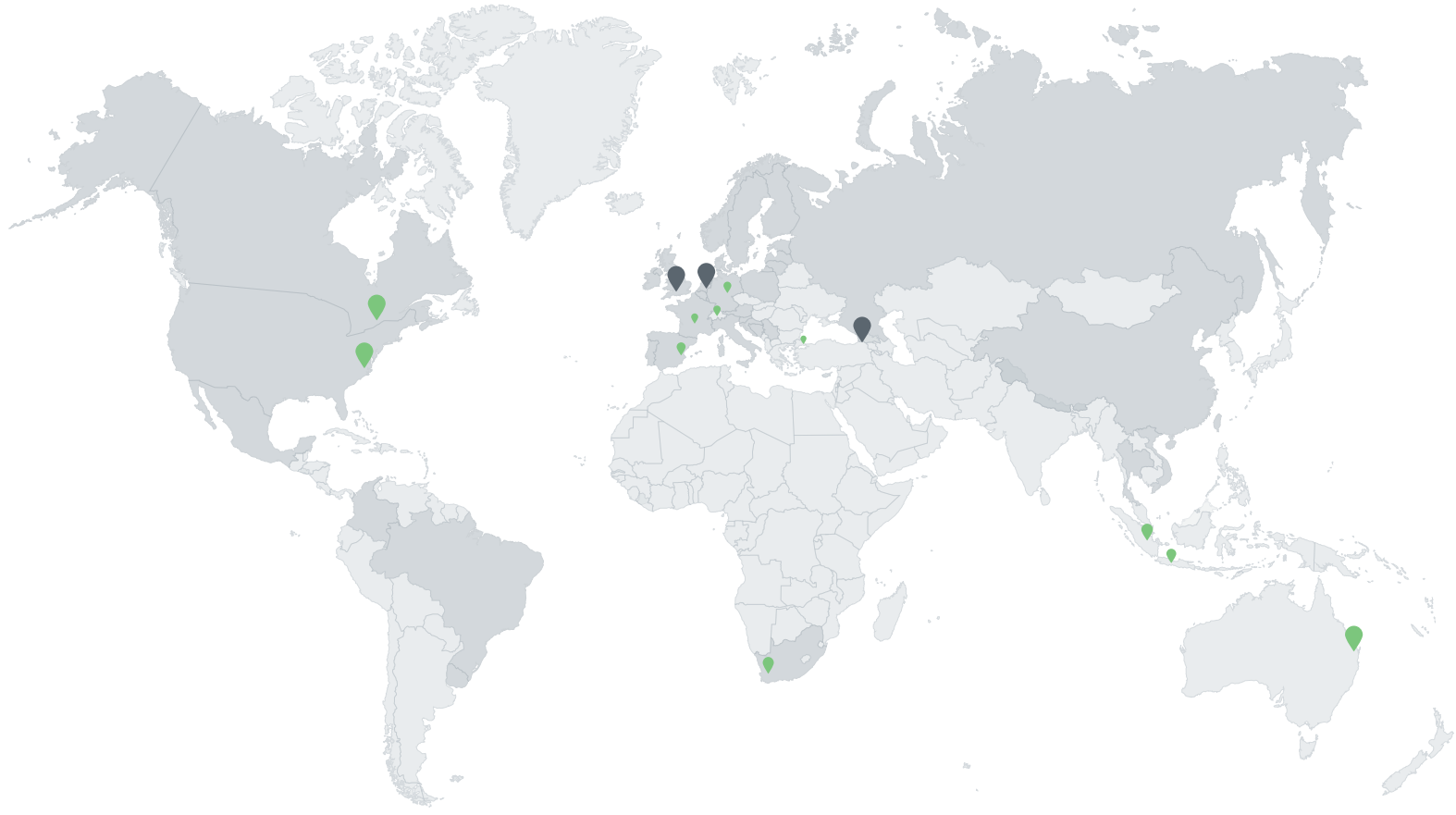

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