PAS 7070:2016

Benchmarking process management – Specification

Contents

Foreword

This PAS was sponsored by the United Arab Emirates Ministry of Interior. Its development was facilitated by BSI Standards Limited and it was published under licence from The British Standards Institution. It came into effect October 2016.

Acknowledgement is given to the technical author nominated by APQC, and to the following organizations that were involved in the development of this PAS as members of the steering group:

- American Productivity & Quality Center (APQC)
- Benchmarking Centre – Ministry of Interior, United Arab Emirates
- British Telecom Group Benchmarking
- Fraunhofer Institute for Production Systems and Design Technology (IPK)
- Her Majesty's Inspectorate of Constabulary (HMIC)
- Intel Corporation
- Juran Europe Ltd
- United Kingdom Accreditation Service (UKAS)

Acknowledgement is also given to the members of a wider review panel who were consulted in the development of this PAS.

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Process validation

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Use of this document

It has been assumed in the preparation of this PAS that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this specification are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standards*, sub-clause **J.1.1**, which states, "Requirements should be expressed using wording such as: 'When tested as described in Annex A, the product shall ...'". This means that only those products that are capable of passing the specified test will be deemed to conform to this specification.

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This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a PAS cannot confer immunity from legal obligations.

Introduction

Benchmarking is the process of identifying "proven practice" in respect of any particular activity (usually in relation to products or services and the processes by which they are created and delivered) by looking outward to examine how others engage in comparable activity to achieve their performance.

Looking outward can be from the viewpoint of a particular department (i.e. examining similar processes or activities of other departments in the same organization) or of larger entities external to the organization, regardless of industry or geography. To do so, the initiating entity engages with target entities selected in accordance with a set of predetermined criteria for the purpose of examining the performance and outcomes of those target entities for self-comparison.

The objective of benchmarking is to find examples of superior performance and understand the processes and practices underlying how those performance levels are achieved. To achieve such an objective, one must first understand and evaluate the current performance of an activity, process or group of processes, so that they can be compared to perceived proven practice. From this it will be possible to identify the means of introducing change or bringing about performance improvement.

Interest in the benchmarking of practices and performance has been steadily growing in recent years, for several very good reasons.

Increasingly, organizations wish to compare themselves with others who have exhibited improved performance so as to demonstrate parity with sector norms or support claims of superior performance. Others, having become aware of a loss of position in their particular market, are looking for indication of why this should be and how their relative performance can be improved.

A third and relatively new, reason for this growth of interest in benchmarking relates to the ability to capture the knowledge associated with high performing practices and transfer that knowledge in what is currently one of the applications for successful 'knowledge management'. This has brought a growing awareness of the importance of capturing today's perception of what constitutes 'proven practice' in any particular field in order to make that information available to tomorrow's practitioners. Benchmarking and the transfer of proven practices, is seen as providing assurance that the captured information is indeed that which should be passed on to future generations.

There are a number of very good benchmarking methodologies in current use many of which although they are very reputable and highly regarded, are proprietary in nature. This can be a deterrent for some who may wish to make use of benchmarking, particularly smaller organizations and those that are perhaps considering the use of benchmarking for the first time and are as yet unsure of the potential benefits.

The credibility and relevance of benchmarking outcomes depends largely on the extent and rigour of the benchmarking process used and the governance applied to oversee the process.

To this end this PAS includes a governance clause that sets out the principles and objectives for benchmarking process management. However, although it is specific about what has to be delivered to demonstrate sound governance the PAS avoids being overly specific about who does what for the reason that to do so would potentially limit the applicability of the PAS.

This new specification provides a readily available, easy to apply, specification for benchmarking process management that can be used by large or small entities with equal opportunity for a successful outcome.

By ensuring that the process is robust and uniformly applicable and that its outcomes are objectively verifiable, we look to provide a specification that can be used with confidence for the purpose of self-determination and is sufficiently robust to support independent, third party, certification where this is considered beneficial.

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1 Scope

This PAS specifies a repeatable, uniformly applicable process structured so as to be implementable as a system for managing benchmarking processes, which will enable organizations to:

- Identify organizational needs for benchmarking through systematic examination of the organization's existing processes and procedures to identify those that could potentially benefit from a benchmarking approach;

- Articulate the purpose of benchmarking and how the information will be used;

- Identify other organization(s) potentially capable of providing example of proven practice;

- Document and analyse the practices followed and performance achieved both internally and by the identified example organization(s);

- Compare own practices and performance with that of the others analysed and identify differences;

- Review differences identified to enable management of the benchmarking organization to take decisions as to whether there is sufficient organizational benefit to justify changes;

- evaluate the benefit achieved from the implemented changes in order to establish organizational performance expectations and substantiate ongoing results.

Benchmarking is not an independent activity, but rather a tool to gather the information about performance and practices within and external to an organization, allowing evaluation of internal performance, target setting and identification of improvement opportunities. As such benchmarking must be implemented and monitored as part of organizational governance and aligned to what the organization needs to make decisions and manage performance (see Figure 1).

The processes identified in figure 1 are annotated with the number of the relevant clauses of this specification where they are detailed.

The benchmarking model is appropriate for use in relation to all benchmarking types (**see Annex A**) and its implementation will ensure that organizations give the necessary priority to:

- Identifying, understanding and working to a coordinated benchmarking plan or code of conduct;

- selecting credible, relevant, target organizations;

- demonstrating that an established process has been followed; and

- ensuring that benchmarking results are robust and open to scrutiny.with the objective of facilitating the reporting of benchmarking results in a credible manner and enabling genuine comparison between benchmarking results.

Figure 1 – The Benchmarking Model
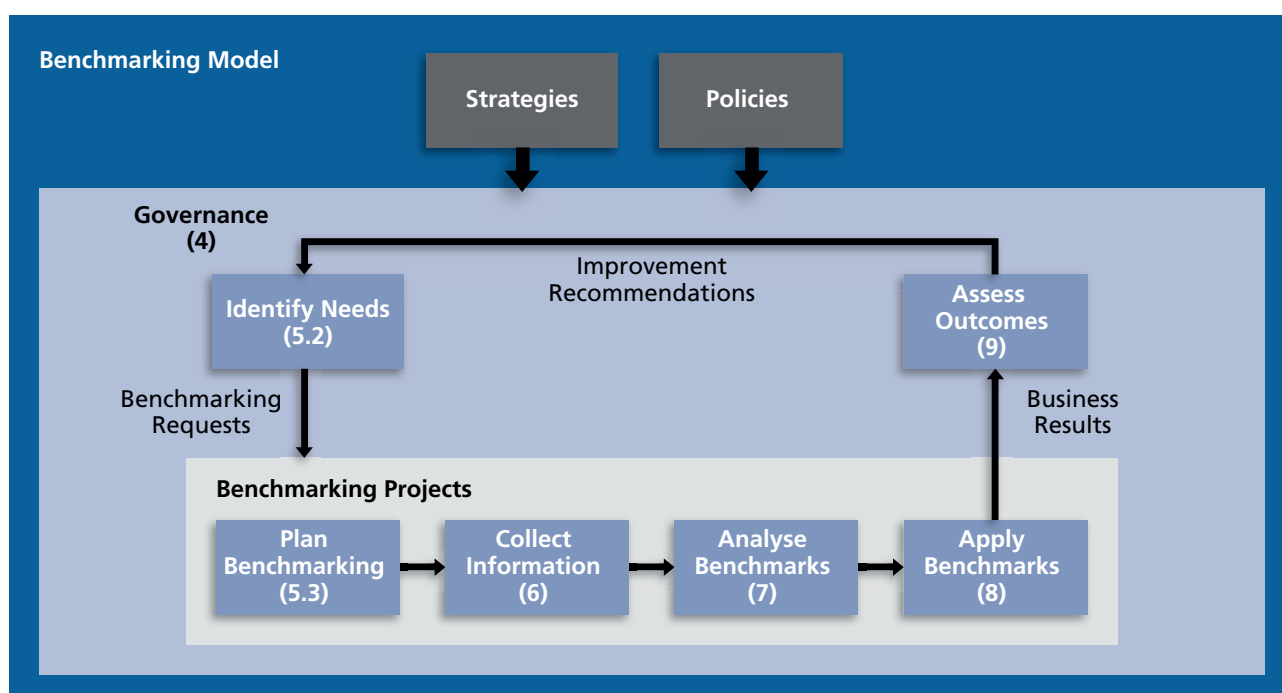
NOTE See Annex F for examples of process flow diagrams.

2 Normative references

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*There are no external standards essential to the correct application of this PAS but attention is drawn to the example codes of practice referred to in **Annex C**, the use of one or other of which is strongly recommended.*

3 Terms and definitions

For the purposes of this PAS, the following terms and definitions apply.

3.1 code of conduct

set of detailed guidelines and practices for conducting benchmarking activities which contribute to efficient, effective, and ethical benchmarking, with provisions to address privacy and competition law (see **Annex C**)

3.2 framework

predetermined, underlying structure establishing the manner in which related information is organized

3.3 information

data, facts and other relevant knowledge collected as part of benchmarking activities, to include what is directly needed and that which provides sufficient context for what is collected, so that it can be properly interpreted and applied

NOTE within the document the term data is occasionally used where this relates to a concept or capability commonly referred to (e.g. data security).

3.4 management system

policies, processes, and systems used to fulfil benchmarking objectives within an organization

3.5 policy

statement of intended benchmarking related action, adopted by an organization

3.6 practitioner

Individual possessing or committed to acquiring, relevant knowledge and experience, appointed by an organization to undertake one or more benchmarking tasks or activities

NOTE 1 For the purposes of this specification, the term 'practitioner' denotes an individual appointed by an organization for a specific benchmarking related purpose and does not necessarily imply that the individual already possesses particular knowledge or expertise. It is however a requirement of this specification that practitioner knowledge and experience be periodically assessed and training provided where necessary. Practitioners could include for example, researchers, analysts, process specialists.

NOTE 2 While workers may perform forms of benchmarking within their daily activities, they are not considered practitioners. Practitioners are those that are engaged in benchmarking as a discrete activity.

3.7 proven practice

generally recognised way of doing something that has been shown by commonly accepted evidence and experience to be effective in delivering specified results in a majority of conditions and situations

NOTE To be a proven practice an organization must have utilized it successfully in the conduct of real work. Repeatability and evidence of better than average performance/outcomes may also be necessary. Further, there may be more than a single proven practice for a process or activity, based upon context or other factors. Proven practices are also sometimes referred to as leading or best practices.

3.8 relevant executive level

management level in any organizational hierarchy at which strategic decisions on a particular topic, can be efficiently and effectively, made

NOTE Because it is intended that this PAS should be applicable by as wide a range of organizational types and sizes as possible, it is judged not to be appropriate to specify particular levels for decision making. It is for each organization to determine at what level the responsibility for (benchmarking) strategy and related governance should be taken.

3.9 benchmarking sponsor

executive, manager or leader within the organization that authorizes, funds, and/or provides leadership support for one or more benchmarking projects

3.10 (benchmarking) strategy

set of organizational benchmarking initiatives and objectives intended to achieve one or more particular long-term organizational objective(s)

4 Governance and Leadership

4.1 Conceptual overview

This clause establishes the considerations necessary to establish the approach, roles, responsibilities and guidelines for undertaking benchmarking in an organization.

4.2 Organizational context

To define when and how benchmarking will be performed and benchmarking results applied, the organization shall establish, document and authorise at the relevant executive level:

4.2.1 the strategic objectives and intended outcomes of its anticipated benchmarking activities;

4.2.2 the identity (role or individual) of the entity responsible for delivery of strategic benchmarking objectives and initiatives;

4.2.3 the benchmarking policy to be implemented, including:

a) requirement to identify and select benchmarking efforts aligned to strategic organizational needs and critical success factors, including where necessary any specific parts of the organization to be benchmarked;

b) adopting a benchmarking code of conduct, to include expectations for treatment of intellectual property, confidentiality and competition law, and anti-trust as a minimum;

c) requirement to comply with the organization's processes, procedures and guidelines.

4.3 Establish roles and responsibilities

The organization shall establish, document and authorize at the relevant executive level, the required organizational roles and responsibilities, in accordance with the requirements of **4.3.1** and **4.3.2**.

4.3.1 The organization shall assign accountability for:

a) identifying benchmarking needs within the organization;

b) aligning benchmarking needs to the organization's strategy;

c) establishing and maintaining a benchmarking management system;

d) defining and developing benchmarking competencies;

e) planning and implementing benchmarking activities;

f) assessing and reporting benchmarking outcomes.

NOTE 1 It is recommended that consideration be given to establishing a steering group to govern the organization's benchmarking efforts

NOTE 2 A core team to facilitate organization-wide benchmarking efforts may be established

4.3.2 The organization shall establish the benchmarking roles and collaboration model, to include:

a) Benchmarking roles for all practices and processes identified in the benchmarking management system;

b) Benchmarking reporting structure;

c) Role and engagement approach for leadership.

NOTE 1 Whatever the size of the organization, the roles established should cover all levels of benchmarking responsibility i.e. including project sponsorship, management and practitioners, but need not necessarily be vested in different people.

NOTE 2 Typical roles may include benchmarking analyst, contract and screening specialist, interviewer, subject matter expert, etc. These will be determined by the type and scope of the benchmarking effort.

NOTE 3 A benchmarking network or community of practice, may be established to engage personnel conducting or applying benchmarks

4.3.3 The organization shall make available when required benchmarking training, including:

a) training on the preferred benchmarking methodology to personnel that will perform benchmarking;

b) follow-up training to develop and build benchmarking competencies of personnel;

c) planning tracking and recording of required training, including:

    i) Identification of personnel that require training;

    ii) Training delivery approaches (e.g., self-study, instructor lead, etc.);

    iii) Schedule of training events;

    iv) Records of training completion.

4.4 Process, procedure and guidelines

4.4.1 The organization shall establish, document and authorize at the relevant executive level, the process, procedure and guideline documents required including:

a) the process to be used for specification and selection of benchmarking methodology to be used;

b) the definition of benchmarking to be applied;

c) Allowable approaches for benchmarking, including:

    i) Benchmarking processes for planning, collection, analysis and application;

    ii) Guidelines for identifying and selecting where to use benchmarking within the organization;

    iii) Identification of benchmarking skills and competencies required by role;

    iv) Documentation and audit trail requirements;

    v) Storage and data protection requirements;

    vi) Guidelines and ethics for benchmarking practitioners e.g. a code of conduct or similar (see **Annex C**).

NOTE Required documentation may include that for collection, storage, protection, etc.

4.4.2 The organization shall establish, document and authorize at the relevant executive level, a benchmarking communication programme, including:

a) Communication objectives;

b) Identification of target audience(s);

c) Delivery approaches (e.g., reports, webinars; intranet content, newsletters, posters, etc.) aligned to audience(s);

d) Schedule of events.

NOTE 1 A primary objective of both training and communication is the promulgation of awareness on the subject of benchmarking amongst practitioners and other stakeholders within and outwith the organization.

NOTE 2 The communication plan may include:

• *Plans to define and communicate alignment of benchmarking efforts to the organization's strategic goals and objectives;*

• *Plans to collect and publish testimonials about benchmarking impact;*

• *Awareness objectives and activities.*

5 Plan benchmarking

5.1 Conceptual overview

This clause establishes requirements for the determination of what will be benchmarked, why such benchmarks are needed, and how they will be collected, analysed and used to enable the determination of suitable methodology and practice.

5.2 Identify where benchmarking is needed

5.2.1 In order to identify where benchmarking is needed and determine intended applications and expected outcomes, the organization shall periodically evaluate organizational needs and challenges to:

a) Identify where benchmarking can support the organization in achieving its strategies and objectives;

b) Define the problems and/or opportunities that benchmarking will be used to address;

c) Focus how benchmarking can be used for improvement, decision-making, target setting, and other essential activities.

5.2.2 the organization shall establish discrete benchmarking needs by:

a) Selecting the processes or practices to benchmark;

b) Defining one or more benchmarking projects;

c) Assigning a benchmarking sponsor for each benchmarking project;

d) Assigning a project manager (PM) for each benchmarking project;

e) Developing the business case including:

    i) Scope (inclusions and exclusions);

    ii) Stakeholders and engagement plan;

    iii) Resources required;

    iv) Expected timeline;

    v) Budget;

    vi) Challenges and risks;

    vii) Measures of success;

    viii) Defining whether the benchmarking is one time only or to be recurring.

5.3 Planning the benchmarking projects

5.3.1 In planning all aspects of each benchmarking project in accordance with the organization's policies, practitioners shall;

a) Establish the benchmarking approaches to be applied (e.g. secondary research, surveys, telephone interviews, site visits, etc.);

b) Identify all resource requirements;

c) Plan project activities.

5.3.2 To specify the processes, practices or capabilities to be benchmarked, practitioners shall:

a) identify or define a framework to organize the benchmarks to be collected;

NOTE 1 A framework will provide a sustainable and repeatable structure within which to which processes to benchmark, what to benchmark, and how to tag/store organize and align benchmarking information. The framework aids in identifying collected benchmarking information. Typically, a process framework is used, such as APICS Supply Chain Council's Supply Chain Operations Reference (SCOR) model, APQC's Process Classification Framework[SM],(PCF), or the Value Chain Group's Value Reference Model (VRM).

NOTE 2 Where an organization process framework exists, it should be used. External frameworks may also be used to align results to enable broader applicability and correlation to other benchmarking sources.

NOTE 3 As an alternative to a process framework, a model of the process areas within scope may be used to provide structure and context for benchmarking efforts and alignment of results.

b) specify the type of benchmark information to be collected for each process, practice or capability (i.e. qualitative, quantitative, proven practice);

c) specify the precision and accuracy of the benchmarking information to be collected;

d) specify the time period constraints of the benchmarking information;

NOTE Time constraints should address both a point or span of time that the information must be from (e.g., the most recent fiscal year, as of 1 January 2015, etc.) and the length of time to include in measured values (e.g. annual operating cost, monthly transactions, etc.).

e) define the assumed purpose and/or expectations for each benchmark to be collected.

NOTE Assumed purpose (e.g., hypotheses) and expectations should be used to define sufficient benchmarking information to enable validation or refutation of expectations

5.3.3 Practitioners shall identify the specific benchmarking information to be collected as follows:

a) for qualitative, define characteristics of the practices;

b) for quantitative, identify and define measures and/ or Key Performance Indicators (KPI's);

c) for both qualitative and quantitative, define demographics and contextual information to provide context for benchmarking information;

d) for proven practice benchmarks, define aspects of the practices to be assessed.

NOTE Demographics such as industry, region, size of organization, etc. are often used to segment and normalize benchmarking information. The appropriate demographic information to collect should be determined based upon the objectives and intended use.

5.3.4 To provide for common understanding, practitioners shall create a glossary of key terms and definitions for benchmarking information to be collected.

NOTE The integrity of benchmarking efforts and the information collected is directly tied to the common understanding of all participants of all key terms, metrics and KPI definitions to ensure accuracy of provided information and responses to questions. As such, the importance of a comprehensive, detailed, clear and concise glossary cannot be overstated.

5.3.5 To determine the credibility of intended action, practitioners shall review and refine with stakeholders the details of benchmarking information to be collected.

5.3.6 To ensure the relevance of collected information, practitioners shall develop the criteria to determine from where benchmarks will be collected.

NOTE Annex B provides example criteria to be considered.

6 Collect information

6.1 Conceptual overview

This clause defines the techniques and interactions for collecting benchmarks, including gathering existing information and collecting new information.

Gathering and collating available benchmark information is often the fastest and least costly approach to benchmarking. This involves finding and assimilating information and materials available for use, both internally and through external sources. Collating this information into a usable form based upon the scope and expected use of the benchmarking project may result in sufficient benchmarking information to complete the project or will clarify what additional benchmarking information is to be collected.

Researching information to establish new benchmarks is more detailed and time consuming. This involves identifying the necessary benchmark information, determining potential sources for the information, and collecting that information from the organizations of interest. Additional rigor is needed to ensure that benchmarking information collected is suitable for use, based upon the scope and expected use of the benchmarking project.

6.2 Gather benchmark information

6.2.1 When defined as necessary in the benchmarking project plan, practitioners shall identify, and evaluate internal and external sources of benchmarking information, in accordance with the organization's benchmarking policy, in order to select the sources of available benchmarking information to be targeted for gathering, including:

a) previously gathered and/or collected benchmarking information that exists within the organization;

b) external sources of available benchmarking information, including:

   i)   Data repositories;

   ii) Universities and libraries;

   iii) Professional and industry associations;

   iv) Conferences;

   v)   Collaborative and consortium groups;

   vi) Web-based assets.

6.2.2 Practitioners shall collect and assess benchmarking information from the sources identified in **6.2.1** adopting the approach specified in **a)** to **e)** of this clause:

a) establishing access to each source as required by that source and complying with all organizational policies and processes when establishing subscriptions or registrations to sources;

b) defining search criteria to identify relevant benchmarking information, to include:

   i)   Keywords and phrases;

   ii) Organizational titles or roles of authors;

   iii) Type of content or publication (e.g., white papers, books, case studies, etc.);

c) searching each selected source for relevant benchmarking information;

d) gathering and/or summarizing relevant benchmarking information identified:

   i)   reviewing and complying with all copyrights, agreements and terms of use specified by the source;

   ii) maintaining attribution for all sources.

e) evaluating the gathered benchmarking information against the pre-determined search parameters and project objectives, to determine applicability and usefulness.

6.2.3 Practitioners shall collate and report the results from gathering available benchmarking information in a form appropriate to the intended use, to include:

a) An index of gathered source information;

b) Identification and/or link to location gathered from;

c) Pointer to or highlight of specific relevant content within each source;

NOTE Summaries or synthesized content may be generated to simplify or put into form to support intended use

6.2.4 Practitioners shall identify findings from the gathered information to include:

a) Observations of applicability;

b) Trends;

c) Gap analysis to current internal capabilities and/or performance.

NOTE Summaries or synthesized content may be generated to organize findings or put into form to support intended use

6.2.5 Practitioners shall document, store, and/or distribute the results from gathering available benchmarking information, taking account of any reporting required for benchmarking governance **(4)** and the need for internal visibility and availability of results.

NOTE This should include notification to the stakeholders.

6.2.6 Practitioners shall evaluate the sufficiency of the results to determine remaining benchmarking requirements and scope of need.

6.2.7 Practitioners shall review the sufficiency of the results with stakeholders to establish any required next steps, to include collecting new benchmark information where needed.

6.3 Research benchmark information

6.3.1 When defined as necessary in the benchmarking project plan, practitioners shall determine the collection tools to be used, in accordance with the organization's benchmarking policy, taking account of the precision and accuracy required and as applicable for the type of benchmarking in scope.

The collection tools considered shall include but are not restricted to, those identified in **a)** to **c)** of this clause,

a) For direct measurement:
   i) Identify automation where required measures currently exist or can be added;
   ii) Identify available tools that can be used for measurement and capture of required measures;
   iii) Evaluate the potential operational or performance impact of collecting the measures;
   iv) Develop a measurement plan which eliminates or minimizes the impact of collection;
   v) Develop measurement capture aids and templates.

b) For collection via surveys:
   i) Select the type of survey collection (e.g., file, web-based, interview);
   ii) Develop survey questions for each measure or practice. (**Annex D** provides survey construction principles and guidelines to consider);
   iii) Review and refine questions for appropriateness and completeness with subject matter experts, potential survey participants and stakeholders;
   iv) Build the survey via the technology supporting the type of collection;
   v) Pilot the survey with a small group of potential survey participants;
   vi) Specify the time period the survey will be open for collection (e.g., fixed, periodic, continuous).

c) For interviews and/or site visits:
   i) Prepare a benchmarking information collection guide that details what will be discussed and/or observed;
   ii) Design the event (e.g., one-on-on interviews, demonstrations, observations, tours, etc.);
   iii) Define logistic requirements (e.g., virtual or in-person, date/time/duration, participants, facilities and materials required, etc.);
   iv) Prepare an agenda to facilitate the event;
   v) Conduct a dry run to validate effectiveness and timing requirements for interviews;
   vi) Develop benchmarking information capture aids and templates.

6.3.2 The project team shall identify candidate organizations to participate in collection, including:

a) applying benchmarking criteria (see **5.3.6 and Annex B**) to develop a list of potential benchmarking participants;

b) segmenting and/or prioritizing the list of potential participants to organize and plan outreach efforts to support quantity required**;**

c) evaluating and selecting outreach approach(es) to contact potential survey participants (e.g., email, phone campaign, screening survey, media, etc.).

NOTE It is recommended that screening surveys be developed and managed in a fashion similar to benchmarking surveys defined within this standard

d) developing a contract and screening plan to engage potential participants in accordance with segmentation and/or prioritization;

e) defining the value of participation;

f) establishing the required effort of participation (e.g. number and type of resources, time to complete, etc.).

6.3.3 Practitioners shall contact and screen potential participants using the approaches identified in **a)** to **d)**, as applicable for the type of benchmarking in scope:

a) conducting outreach programmes, using prepared scripts and aids where appropriate (to include value of participation and required effort);

b) screening potential participants based upon benchmarking criteria to ensure appropriateness;

c) selecting participants to include in the collection;

d) securing commitment from the selected participants to contribute to the collection and on-boarding omitted participants.

NOTE It is recommended that commitment include a signed agreement on permissible use of the benchmarking information to be collected

6.3.4 Practitioners shall collect information in accordance with the benchmarking project plan, using direct measurement **(a)**, surveys **(b)** interviews and/or site visits **(c)** as applicable for the type of benchmarking in scope:

a) For direct measurement:
    i)   Initiate measurement and data capture;
    ii)   Monitor measurements and data capture for reasonableness;
    iii) Make adjustments as necessary;
    iv)   End measurement and data capture.

b) For surveys, launch and administer the survey:
    i)   Providing support and clarification to aid completion by participants;
    ii)   Monitoring the rate of survey submissions;
    iii) valuate completeness of survey submissions;
    iv)   Performing reasonableness checks on survey submissions;
    v)   Contacting participants to resolve any issues with completeness or reasonableness checks before closing the survey.

c) For interviews and/or site visits:
    i)   Plan each event with the selected participant;
    ii)   Facilitate the event;
    iii) Capture benchmarking information;
    iv)   Capture actions and commitments;
    v)   Manage follow-up activities and thank participants.

7 Analyse benchmarks

7.1 Conceptual overview

This clause defines how collected benchmarking information is assessed to ensure its viability and how it is analysed for significance.

While some preliminary analysis may be performed during gathering and collection activities, detailed validation, analysis and documentation of results must be performed once collection is complete. There are also times when large volumes of information are being collected, when interim analysis and reporting may be merited to inform stakeholders and perform refinements of the collection efforts (see **Annex E** for a list of analysis types that can be used).

7.2 Validate benchmark information

Practitioners shall validate the benchmarking information to ensure it is appropriate for use (e.g., fits scope and provides apples-to-apples comparison), using the approaches specified in **a)** to **d)** of this clause:

a) normalize data by:

   i) Transforming raw data into normalized form (apples-to-apples);

   ii) Evaluating normalized data for anomalies, gaps and inconsistencies;

   iii) Contacting participants to resolve issues.

b) perform logical and statistical analysis as applicable for the type of benchmarking in scope, by:

   i) Evaluating data for logical consistency;

   ii) Performing statistical analysis to identify outliers;

   iii) Contacting participants to resolve issues.

c) when resolution of issues is not possible, determine whether to use the data or quarantine (exclude from results);

d) for interviews and/or site visits review captured information and case studies with the participant to ensure accuracy.

7.3 Identify trends and key findings

Practitioners shall analyse collected benchmark information as appropriate to the type of benchmarking in use, to establish the significance of information gathered and put into usable forms for assimilation of key findings, by means of:

a) trend analysis, using:

   i) analyses techniques relevant to the subject;

   ii) Summary of observed trends and observations;

   iii) Review and confirmation of findings with subject matter experts.

b) Comparative and/or gap analysis techniques, to evaluate:

   i) against current state;

   ii) against desired state;

   iii) how the results fit against hypotheses and expectations.

c) review of trends and key findings with stakeholders to determine sufficiency of results;

d) identification of any additional benchmarking needs based upon sufficiency of results.

7.4 Document and report

7.4.1 Practitioners shall develop, document and report the benchmarking results as applicable for the type of benchmarking in scope, including:

a) participant reports for each contributor to the benchmarking project providing information on:

   i) Demographics and volume of participants;

   ii) Blinded, aggregate benchmarking results.

NOTE It is recommended that:

1. *participant reports include both aggregate results and a comparison to the individual participant;*
2. *participant reports include segmented views of the aggregate results if sufficient benchmarking information supports those views;*
3. *charts, graphs and data tables be used to enhance understanding and usability of the results;*
4. *a list of participants be included to enhance the credibility and usability of the results.*

b) metrics and measurement reports, providing information on:

   i) Demographics and volume of participants;

   ii) Blinded, aggregate benchmarking results;

   iii) Trends and key findings;

   iv) Tools to access, filter and analyse the data set (e.g., spreadsheets, cross-tabs, repositories, etc.).

c) proven practice reports, providing, for each practice employed:

   i) Identification of source of proven practice;

   ii) Context for the proven practice;

   iii) References to applicable standards and processes;

   iv) Contact information for more information.

d) white papers, providing:

   i) Summary of results;

   ii) Evidence to support results;

   iii) Suggested use, recommendations or call to action;

   iv) Attribution to participants;

   v) References to applicable standards and processes.

NOTE It is essential that practitioners comply with organizational policies and processes for the format, approval, distribution and storage of all documentation and reports.

7.4.2 As applicable for the type of benchmarking in scope, practitioners shall conduct awareness and outreach activities to connect potential users with the results of the benchmarking project, through:

a) publicising release and availability;

b) conducting speeches and/or webinars;

c) submitting articles and/or reports to relevant journals.

8 Apply benchmarks

8.1 Conceptual overview

This clause defines how benchmarks are applied within the organization including considerations for maintenance of information, periodic update and obsolescence.

Before any benchmarking information is collected it is useful to understand the intended use. This in turn will influence what is collected and how. Benchmarking information that is collected and then sits on the shelf provides little value. The objective is to get it to the parts of the organization that can use it to drive performance and improvement.

Once benchmarking information has been collected an organization may apply it for evaluation or improvement by adopting as is or adapting to fit the organizational needs and context. Collecting sufficient contextual information to accompany the benchmarks is essential to evaluate whether adopt or adapt is appropriate.

8.2 Use within organizational management

Taking account of any particular requirements in accordance with clause **4.2.3 a),** practitioners in collaboration with stakeholders shall define where, when and how benchmarks are to be used for planning **(8.2.1)**, management of performance **(8.2.2)** and improvement of work processes **(8.2.3)**,

8.2.1 Within the strategic planning processes to provide any or all of:

a) Guidelines for how to identify which processes should benchmark internal performance and/or practices;

b) Guidelines for how to identify which processes should be compared to external performance and/or practice benchmarking information;

c) Guidelines for how internal and external benchmarks should be used to set expected performance targets and measureable outcomes.

8.2.2 Within organizational practices and processes to include any or all of:

a) Setting performance targets and stretch goals;

b) Setting warning and alert thresholds;

c) Planning contingencies and corrective actions for warnings and/or alerts;

d) Tracking and reporting performance;

e) Evaluating warnings and alerts;

f) Initiating corrective actions.

8.2.3 To identify, select and implement improvements, including any or all of:

a) Determining improvement opportunities;

b) Developing business cases;

c) Prioritizing and select improvements;

d) Establishing measures to track impact of improvements;

e) Setting improvement targets;

f) Manage improvement implementation projects;

g) Monitoring improvement results.

8.3 Maintain benchmark information

8.3.1 Practitioners shall maintain benchmark information to enable its appropriate use through the provision and management of storage methods and locations that are secure and provided with access control commensurate with the nature and confidentiality of the information held.

8.3.2 Practitioners shall maintain appropriateness of stored benchmarking information by means of periodic evaluation of the relevance of the information stored, including for:

i)   Areas of relevance;

ii)   Appropriateness for use;

iii) Obsolescence.

8.3.3 Practitioners shall periodically evaluate the impacts of:

i)   the inappropriate use of benchmarking information;

ii)   the lack of relevant benchmarking information;

in order to establish a refresh plan to update and/or extend, obsolesce or archive, stored benchmarking information that is either to be retained or is no longer appropriate for use.

9 Assess Outcomes

9.1 Review and update benchmarking processes, procedures and guidelines

To provide for effective and appropriate benchmarking activities across the organization, the organization shall undertake the actions identified in **9.1.1**.to **9.1.5** of this clause to maintain the currency and integrity of process, procedure, guidelines and other benchmarking documentation over time.

at the relevant executive level, periodically review the benchmarking process, procedure and guidelines for:

a) effectiveness;

b) status of actions from previous reviews;

c) further opportunities for improvement.

9.1.1 establish a change control process for benchmarking practice and process documentation, including:

a) How to request a change;

b) Change review and disposition approach;

c) Change request tracking and reporting;

d) Update review and approval approach.

9.1.2 enforce compliance to the change control process.

9.1.3 periodically review the training plan for effectiveness and to identify opportunities for improvement.

9.1.4 periodically review the communication and awareness plan or effectiveness and to identify opportunities for improvement.

9.2 Evaluate effectiveness of benchmarking

Practitioners shall evaluate the effectiveness of the applied benchmarking methodology by means of:

9.2.1 identifying measures of effectiveness for the benchmarking methodology in use;

9.2.2 specifying a process to measure effectiveness in accordance with the defined measures;

9.2.3 setting up a procedure for collecting and reporting on the outcomes of effectiveness measures;

9.2.4 identifying opportunities for improving the effectiveness of the benchmarking methodology applied.

NOTE Effectiveness can be demonstrated and measured as reduced risk, accuracy of forecast to target, alignment to strategic need and focus/prioritization of initiatives and improvements through the application of appropriate benchmark information within an organization, as examples.

9.3 Evaluate the impact(s)* of benchmarking

Practitioners shall evaluate the impact of benchmarking on targets and expected outcomes by means of:

9.3.1 defining measures of impact from the use of benchmarking information;

NOTE Impact measures should be aligned to organizational needs/challenges.

9.3.2 establishing a process to measure impact from the use of benchmarking information;

9.3.3 baselining internal performance to measure impact against;

9.3.4 collecting and reporting on the outcomes of impact measures;

9.3.5 identifying opportunities for improving the positive impact and/or reducing or eliminating negative impact, from the use of benchmarking information.

NOTE In this context, 'Impact' covers all changes, good and bad. Intended or unintended, direct and indirect.

10 Claims of conformity

10.1 Conceptual overview

This clause defines how public statements claiming conformity with PAS 7070 for benchmarking outcome reports are to be made, including requirements for supporting information to be made available in relation to such claims.

It sets out the form and content of claims of compliance with PAS 7070 associated with the publication of results from benchmarking undertaken in accordance with PAS 7070 requirements, so as to reduce the possibility of confusion between the various types of claim , e.g. the possibility that a 'self-assessed' claim might be misread as a 'certificated claim' or that a benchmarking outcome relating to a particular division of an organization could be wrongly assumed to relate to the entire organization.

10.2 General

This PAS does not require external disclosure or public communication of benchmarking results but where public claims of conformity to PAS 7070 are made the provisions in **10.3** and **10.4** shall apply. These provisions include identification of the type of certification or verification undertaken (**10.3**) and requirements for how the claim shall be expressed (**10.4**).

NOTE Organizations seeking to make a claim should ensure that the overall representation of the claim is accurate, clear and not misleading, to comply with international and national regulations on consumer protection.

10.3 Basis of claim

10.3.1 General

The claim shall identify the type of conformity assessment undertaken as one of the following:

a) independent third-party certification in accordance with **10.3.2**;

b) other-party verification in accordance with **10.3.3**; or

c) self-verification in accordance with **10.3.4**.

10.3.2 Independent third party certification

Organizations seeking to demonstrate that their publicly available benchmarking reports have been independently verified as being founded on benchmarking practice undertaken in accordance with this PAS, shall undergo assessment by an independent third-party certification body accredited to provide assessment and certification to this PAS.

10.3.3 Other party verification

Organizations using an alternative method of verification, involving parties other than those qualifying as accredited independent third parties, for the purpose described in 10.2.2, shall satisfy themselves that any such party is able to demonstrate compliance with recognized standards setting out requirements for certification bodies.

NOTE 1 Other-party assessment bodies are those undertaking assessment services without having achieved accreditation from the authorized accreditation service (e.g. UKAS in the UK). Such bodies could include those which, although independent of the organization undertaking the assessment of benchmarking activities, cannot demonstrate complete independence e.g. a trade body providing assessment services for its members or a consultant employed for such a purpose).

NOTE 2 Examples of such recognized standards include BS EN ISO/IEC 17021 and BS EN/ ISO 17065

10.3.4 Self-verification

Organizations shall be able to demonstrate that their benchmarking outcomes have been arrived at in accordance with this PAS, and shall make supporting documentation available on request.

NOTE Where independent third-party certification or other-party verification, is either not an option or is considered not to be necessary, organizations may rely on self-verification. In so doing, organizations should be aware that independent verification could be required in the event of challenge and that consumers could have less confidence in this option.

10.4 Permitted forms of disclosure

Claims of conformity shall use the appropriate form of disclosure, as follows:

a) For claims of conformity based on independent third-party certification in accordance with 10.3.2:

"Benchmarking outcome reporting is based on the benchmarking of *[insert unambiguous, unique description of benchmarking subject]* undertaken by *[insert unambiguous identification of the claimant]* in accordance with PAS 7070,- *[insert unambiguous identification of the certifying body]* certified."

b) For claims of conformity based on other-party assessment in accordance with **10.3.3**:

"Benchmarking outcome reporting is based on the benchmarking of **[insert unambiguous, unique description of benchmarking subject]** undertaken by **[insert unambiguous identification of the claimant]** in accordance with PAS 7070, **[insert unambiguous identification of the validating body] declared."**

c) For claims of conformity based on self-verification in accordance with **10.3.4**:

"Benchmarking outcome reporting is based on the benchmarking of **[insert unambiguous, unique description of benchmarking subject]** undertaken by **[insert unambiguous identification of the claimant]** in accordance with PAS 7070, self-declared."

Annex A (informative)
Benchmarking types and approaches

There are numerous types of and approaches to, benchmarking that can be utilized within organizations. A sample list is provided within this annex along with some key considerations that should be incorporated into planning and execution of the benchmarking efforts.

A.1 Types:

A.1.1 Strategic

Evaluating business plans, markets, portfolios and other strategic elements for potential effectiveness to guide planning and transformation.

Example: Benchmarking approaches, cost and timeline to expand manufacturing into a new region.

A.1.2 Practice

Identification of how work is performed successfully, looking at people, process, technology and knowledge flow enablers.

Examples: Benchmarking the use of rewards in staff retention processes; benchmarking techniques to track and resolve customer complaints; benchmarking methods to evaluate financial risk of a merger or acquisition.

A.1.3 Performance

Gathering information to produce metrics and KPIs to use as a comparison, often using statistical analysis. These may be used to identify improvement opportunities as well as set performance targets.

Examples: Benchmarking cost of goods sold as a percentage of revenue; benchmarking customer retention rate; benchmarking frequency of failure for an asset.

A.2 Approaches

A.2.1 Internal

Evaluating across business units, segments, functions or other divisions within an organization to evaluate consistency of performance and practice.

Examples: Benchmarking time to market for new products across business units or regions; benchmarking rework percentage for product development projects across business units or regions.

A.2.2 External

a) Peer

Evaluating performance and/or practices of a set of similar, often pre-defined organizations.

Examples: Benchmarking consumer trend analysis practices of South American electronics retailers; benchmarking maintenance practices (e.g., condition-based, time-based, etc.) for electric power distribution substations in Canada.

b) Broad

Evaluating performance and/or practices of cross-industry, sometimes dissimilar organizations with analysis of how those could be adapted for the target audience.

Examples: Benchmarking consumer trend analysis practices of manufacturers and retailers globally; benchmarking employee retention rates of software engineers in aerospace, automotive and similar industries.

c) Competitive

Evaluating the performance and practices of competitors, typically focussed around performance of products and services.

Examples: Benchmarking customer retention rates for European mobile phone and internet service providers; benchmarking adoption rate of new products one year after introduction for cable and satellite television providers.

For each of the above, with emphasis on any collection from or about potential competitors, effort should be taken to understand and fully comply with all legal and ethical constraints in accordance with your benchmarking code of conduct.

Annex B (informative)
Identification and Selection of Benchmarking Participants

When identifying benchmarking participants it is effective to define the criteria to be used to qualify and select the candidates based upon the type, breadth, depth and scope of the benchmarking activities. These enable identification, screening and selection of the appropriate participants.

The following is a partial list of potential characteristics, consideration of which is recommended:

A. Size of organization

Is there a desire to only compare organizations larger, smaller, or in a specific range of employees, total revenue, profit, etc.?

Examples: organizations with between 1000 and 5000 employees; organizations with greater than £10B gross revenue.

B. Industry(ies)

Is there a desire to only compare one or more industries or segments of an industry?

Examples: public transportation operators; steel manufacturers.

C. Operating region(s)

Is there a specific region or set of regions to be included?

Examples: Southeast Asia and Australia; large metropolitan areas (greater than 5 million population).

D. Product/service mix

Is there a specific set of products and/or services participants must deliver?

Examples: Project management consulting services; hand-held electronics manufacturers (i.e., smart-phones, tablets).

E. Centralized/decentralized

Is there a need to filter based upon whether management is centralized or distributed across the organization?

Examples; Organizations where procurement is a centralized shared service; quality assurance is decentralized (e.g., each part of the organization defines its own quality assurance approach and staffing).

F. Practices

Are there required practices or capabilities participants must have?

Examples: SEI CMMI Level 4 certified product engineering; finance is a centralized shared service.

G. Age of organization

Is there a required time the organization must have been in existence for?

Examples: organizations that are less than 5 years in operation; European organizations that have been operating in China for more than 10 years.

H. Reputation

Is there a level of reputation or acknowledgement that is necessary?

Examples: winners of the Shingo Prize®; winners of the EFQM Excellence Award or the Malcolm Baldrige National Quality Award.

Along with use for participant selection, consideration should be given to whether the benchmarking analysis and reporting will need to segment results by any or all of these characteristics. That will influence how the information is collected and associated time and cost for the benchmarking efforts.

Annex C (informative)
Benchmarking Codes of Conduct

A benchmarking code of conduct is more than set of principles to be considered while benchmarking. It is a set of behaviours and practices that must be un0ode of Conduct based upon extensive experience in conducting decades of benchmarking efforts globally across industries and with all types and sizes of organizations. It is available for any organization to reuse or adapt. The European Foundation for Quality Management (EFQM) has adapted the APQC Benchmarking Code of Conduct to take into account European competition law. It is also available for reuse or adaptation.

APQC's Benchmarking Code of Conduct

https://www.apqc.org/knowledge-base/documents/benchmarking-code-conduct

EFQM's European Benchmarking Code of Conduct

http://www.efqm.org/sites/default/files/benchmarking_code_of_conduct.pdf

Annex D (informative)
Benchmarking Principles and Guidelines

D.1 Introduction

This annex provides a set of principles and guidelines to be considered when developing and applying surveys and conducting analysis. They are not inclusive of all considerations that may result in quality benchmarking results.

D.2 Survey Principles and Guidelines

a) Clearly state the objectives of the survey;

b) Clearly state the expected characteristics of a survey respondent;

c) Provide one or more ways for a potential respondent to get support;

d) Provide definitions for all key terms;

e) Collect demographic data to qualify and segment the results;

f) Specify the time period applicable for answers (e.g. for the most recent fiscal year, for 2014, etc.);

g) Collect only essential information;

h) Keep questions short and easy to understand;

i) Put easy and interesting questions first;

j) Avoid jargon and acronyms that might be misinterpreted;

k) Collect discrete data elements (numerators and denominators) separately rather than calculated values;

l) Specify the units for quantitative values;

m) Specify the level of precision for quantitative values (consider providing answer ranges);

n) Specify minimum number of data points for valid reporting (e.g., to have statistical significance if required);

o) Do not ask leading questions;

p) For multiple choice and 'select all that apply' lists of responses, allow respondents to select "other" and specify what that represents;

q) Thoroughly test the survey and/or take the survey for your organization before dispatching it to others.

D.3 Analysis Principles and Guidelines

a) Validate each set of participant data collected before beginning analysis, asking the following:

   i) Is it from a valid source (e.g., if survey, can you confirm the respondent represents a real organization)?

   ii) Is it sufficiently complete (e.g., some surveys require a percentage of completion to be valid for inclusion in a data set, such as 70% of answer provided)?

   iii) Are the units correct on answers such as currency?

   iv) Are percentage answers entered correctly (e.g., is 25% entered as .25 or 25)?

b) Normalize each set of participant data collected before analysis, as follows:

   i) Analysis should be based on apples-to-apples comparisons, and

   ii) Identify any outliers in the data after normalization and reconcile with the submitter or source of the data to confirm correctness;

c) Expected types of analysis should be included in the benchmarking plan, but let the data collected guide you to other types of analysis that might fit (see **Annex E** for a list of common analysis types).

Annex E (informative)
Types of analysis and graphical representation useful in relation to benchmarking information

This annex identifies many of the potential types of analysis that can be performed as part of benchmarking activities. It is not all inclusive but rather a guide to be considered during benchmark planning and performance. A number of graphical representations that are useful during analysis and for reporting benchmarking results are also provided.

- **Affinity diagrams** – used to take large numbers of facts or ideas and organize them into patterns or categories; effective in group meetings where time is of the essence and everyone has ideas or information to contribute.

- **Bar and line charts** – graphical representations that compare data from similar data sources.

- **Box and whisker plot charts** – used to compare complex information between multiple groups; depicts the data using the data's range and quartiles to compare the distribution.

- **Brainstorming** – techniques for generating creative ideas and solutions through group discussions.

- **Bubble charts** – a modified scatter diagram that displays three dimensions of data which helps visualize and determine whether three or more variables have an effect on each other; doesn't prove that one variable causes another, but does show the type and strength of relationship between them.

- **Cause and effect diagrams** – used to trace a problem back to all of its possible causes and, ultimately, to its fundamental cause; a simple way to keep group problem solving on track and organized.

- **Comparative analysis** – used to accurately assess an issue from all sides and keep problem-solving teams focused on the facts.

- **Content analysis/text mining** - a powerful search technology for studying massive amounts of written and oral communications (e.g. unstructured data) and discerning patterns.

- **Control charts** – used to track the current performance of processes (especially when changes to processes are made) against how they have performed in the past.

- **Correlation/regression analysis** – used to analyse whether relationships exist between multiple variables and what those relationships might be.

- **Cost of quality calculation** – used to calculate the impact low quality has on business outcomes; often calculated to track and prevent unnecessary costs.

- **Criteria testing matrix** – used to establish priorities, especially in cases where biases need to be mitigated.

- **Financial analysis** – used to analyse the cost/savings of a business solution using payback and return on investment (ROI) calculations.

- **Flow charts** – used to analyse business processes and workflow.

- **Force field analysis** – used to assess all off the forces impacting a business issue.

- **Heat maps** - graphical representations of data in a matrix where the individual elements are represented as colours; colours are used to assist rapid understanding of the differences between the variables and easily identify top and bottom scores for improvement opportunities, track changes over time, and easily compares the ratings between groups.

- **Histograms** – used when a table of numbers is not sufficient to detect patterns in a set of data.

- **Knowledge maps** – used to document knowledge assets (people, expertise, or content) required to execute a particular business process; provides an explicit picture of who has the knowledge, where it is located, who owns and validates it, and why it is important.

- **Monte Carlo simulation** - a problem-solving method that uses a computerized mathematical technique to approximate the probability of certain outcomes by running repeated random samplings of variables and algorithms to obtain all possible outcomes of a decision and assess the impact of the risk.

- **Network analysis** - examines knowledge flows and patterns of interaction in order to suggest changes and improvements to the flow of knowledge and collaboration.

- **Pareto analysis** – used to identify which business issues need to be addressed with highest priority.

- **SIPOC Tables** (collumn headings 'suppliers'; 'inputs'; 'process'; 'customers') - helps clarify the necessary steps in the process and provides clarity on stakeholders, inputs, and outputs before committing to complex flow charts or maps.

- **RACI charts** – ('responsible'; 'accountable'; 'consulted'; 'informed') - a technique that helps identify the roles and responsibilities within the process and ensures that all players are aware of how they work together to achieve the outcomes from the process.

- **Root cause analysis** – used to break down complex problems into their component parts and then determine the absolute causes of the issues.
- **Scatter diagrams** – used to determine whether variables are correlated or share some kind of relationship.
- **Sentiment analysis** – an analysis of human feelings, attitudes, opinions, and/or emotions in online (such as Google News), social sites (such as Twitter, Facebook, YouTube, and blogs), and other enterprise information sources.
- **Spider charts** – used to assess how your organization's performance in multiple areas compares to other organizations' and best-practice standards.
- **Timeline charts** – used to track activities, work streams, or resources of a project over time. Timeline charts help organizations identify concurrent activities and visualize complex projects to keep track of concurrent activities and resources.
- **Tornado diagrams** - used to determine the importance of the variable on the success of a project or product and the amount of uncertainty of the variables in the model that determines its value.
- **Tree/structure diagrams** – used to gain a more detailed understanding of processes and the work being done.
- **Trend analysis** – used to track patterns and variations in your process outputs and performance levels over time.
- **Waterfall graphs** – graphically depict the impact of drivers or restraints on financial and performance measures, or any measure that is subject to changes over time; in other words, lets you graphically depict how an initial value is affected by a series of positive and negative values over time.
- **Wedge Stack graphs** – visualization technique that displays hierarchal data in a radial system; can be for illustrating multi-level frequency data.

Additional information on these and other techniques, methods and diagrams can be found in numerous books, websites and other sources.

NOTE some may require registration and/or fees to access.

Annex F (informative)
Example Benchmarking Process Flows

Figure F.1 – A top down benchmarking process flow chart showing the breakdown of higher level process elements into component parts.
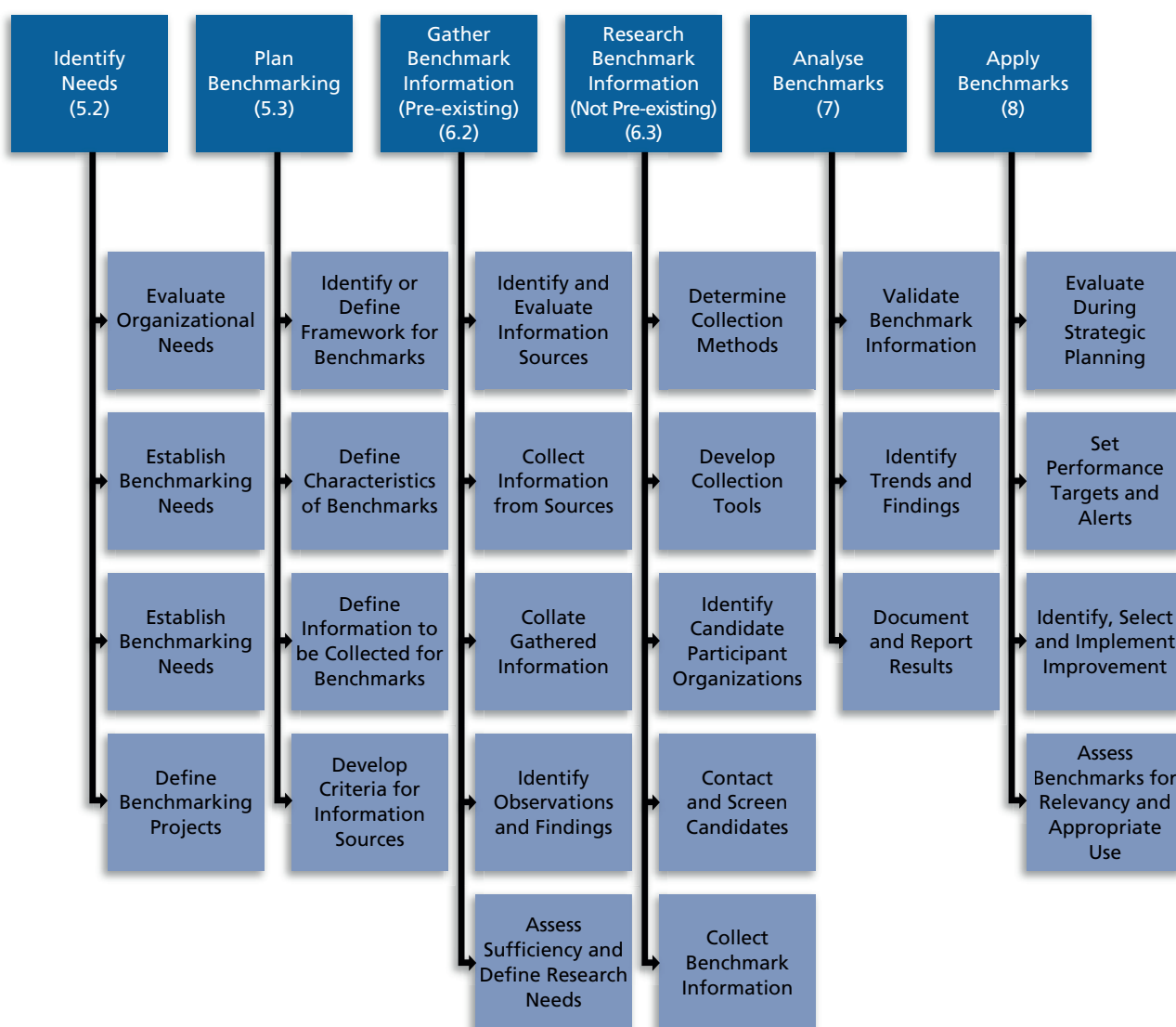
Identify Needs (5.2)	Plan Benchmarking (5.3)	Gather Benchmark Information (Pre-existing) (6.2)	Research Benchmark Information (Not Pre-existing) (6.3)	Analyse Benchmarks (7)	Apply Benchmarks (8)
Evaluate Organizational Needs	Identify or Define Framework for Benchmarks	Identify and Evaluate Information Sources	Determine Collection Methods	Validate Benchmark Information	Evaluate During Strategic Planning
Establish Benchmarking Needs	Define Characteristics of Benchmarks	Collect Information from Sources	Develop Collection Tools	Identify Trends and Findings	Set Performance Targets and Alerts
Establish Benchmarking Needs	Define Information to be Collected for Benchmarks	Collate Gathered Information	Identify Candidate Participant Organizations	Document and Report Results	Identify, Select and Implement Improvement
Define Benchmarking Projects	Develop Criteria for Information Sources	Identify Observations and Findings	Contact and Screen Candidates		Assess Benchmarks for Relevancy and Appropriate Use
		Assess Sufficiency and Define Research Needs	Collect Benchmark Information		

Figure F.2 – Example of an actual flow showing how each of these sub-processes interconnect with decisions, feedback loops, etc
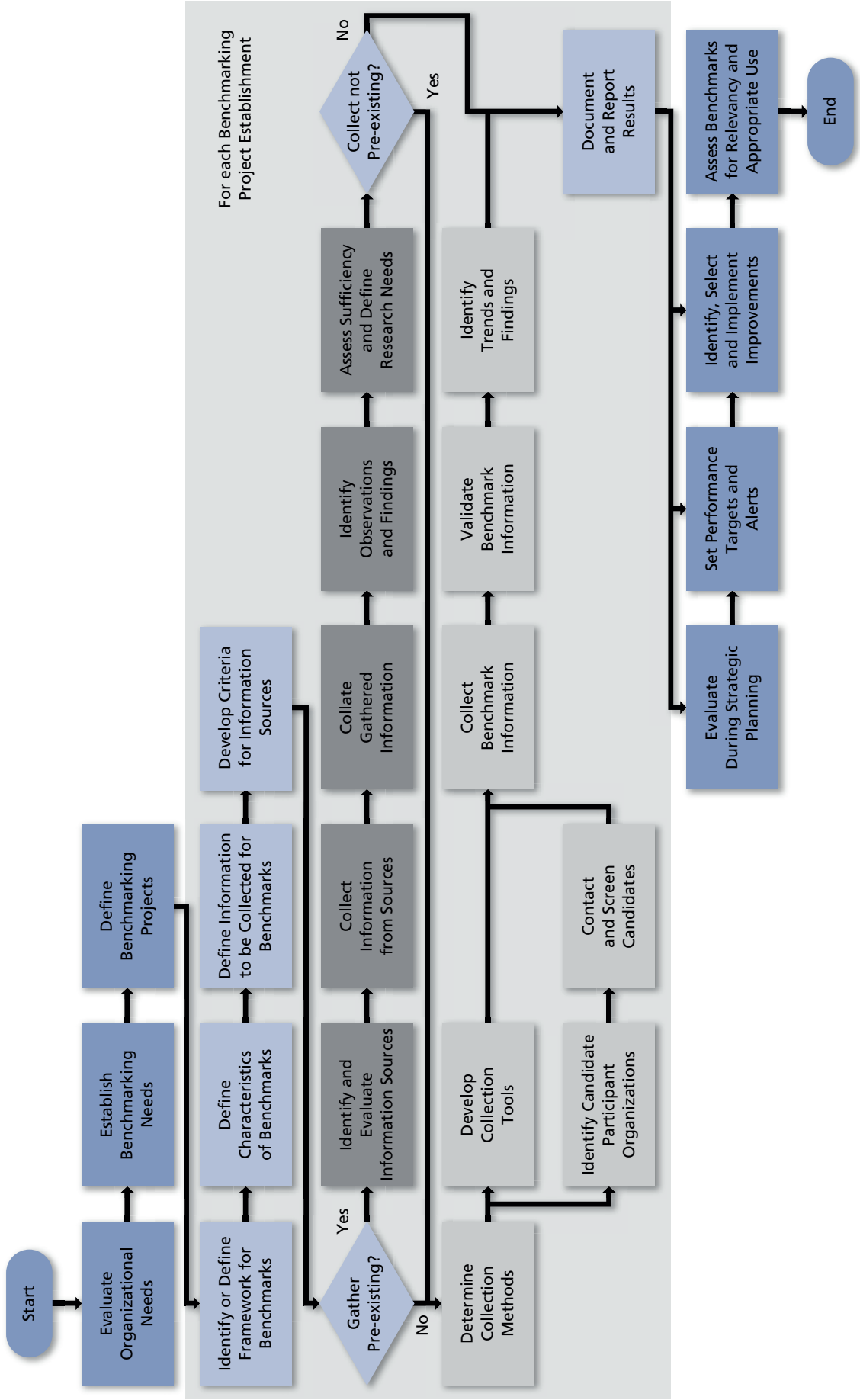
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