FRAMEWORK FOR THE PROMOTION OF EXCELLENCE IN A NETWORK OF SCIENCE CENTRES

Table of Contents

INTRODUCTION

This document contains the accreditation criteria and guidelines for self-evaluation for inclusion in the national network of science centres in South Africa.

The criterion is based on the following core values and concepts:

1. Impact (outreach, individual).
2. Capacity building (skills development, and promoting science, technology, engineering and mathematics (STEM) subjects.
3. Sustainability (forward thinking).
4. Quality (measurement).

The criteria aim to provide answers to the following overarching questions:

1. What is the science centre trying to do?
2. How is the science centre trying to do it?
3. How does the science centre know that it is achieving its objectives?
4. How does the science centre bring about improvements where needed?

This document is divided into two sections. Section A covers the organisational profile and Section B covers the five criterion areas. Both sections will form part of the self-evaluation report, which will be used during the site visit.

The organisational profile (the centre and its context, priorities, relationships and challenges) forms the basis of the application for interim registration. This will be used during the review of the initial application of every science centre.

The five areas in Section B are as follows:

1. Governance and planning.
2. Service offering.
3. People.
4. Communication.
5. Quality management and benchmarking.

Each area has several topics with guiding questions to assist the science centre in describing how it meets the requirements for each criterion. Not all questions will be relevant to every science centre, but if a science centre deems a question irrelevant, it should provide reasons for this.

During the site visit, science centres will have to provide supporting documents as evidence of statements made in the self-evaluation report.

A. ORGANISATIONAL PROFILE

The organisational profile provides a snapshot of your science centre and the key components of your operational, relational and strategic realities.

1. NAME, LOCATION AND OWNERSHIP

Describe your science centre by answering the following:

1. What is the name of your science centre?
   1.1. What is the registered name of your centre?
   1.2. What name is commonly used to refer to your centre?
2. Is your science centre part of a larger organisation?
3. Where is your science centre located? Province, district municipality and area?
4. Why is it located there?
5. Who owns the premises and/or facility?
6. How far is your closest community?
7. What is the total size/floor space of the premises and/or facility?
8. Specify the allocation of floor space in terms of exhibits, training, laboratories, storing, administration, auditorium, etc.
9. Who sponsors the activities of the science centre?

2. GOVERNANCE SYSTEM AND ORGANISATIONAL STRUCTURE

Describe the structures you have in place to govern and manage your science centre by answering the following questions:

1. Under what legal category is your centre registered?
2. What governance structure do you have?
3. To whom and how often does the governance structure report?
4. Provide the organisational structure (both the management and governance) of your science centre.

3. VISION, MISSION AND PURPOSE

Describe the key strategic drivers of your science centre by answering the following questions:

1. What is your stated vision?
2. What is your stated mission?
3. If your science centre is part of a larger organisation, how do your vision and mission align with those of the larger organisation?
4. What is your purpose as a science centre?

4. KEY RELATIONSHIPS

Specify and describe the key relationships your science centre has by answering the following questions:

1. Identify all the science centre's key relationship groups
   1.1. Sponsors e.g. government, private sector, individuals
   1.2. Customers e.g. learners
   1.3. Partners
   1.4. Staff e.g. complimentary staff from the larger organisation
   1.5. Visitors
   1.6. Interns and volunteers.
2. What should each identified group be informed about on a regular basis?
3. Specify the communication mechanisms you use to communicate with each identified group (e.g. meetings, reports, newsletters).
4. How often do you communicate with each group?

Key Relationship Group	Regular informed about	Form of Communication	Intervals of Communication
Sponsors			
Customers			
Partners			
Staff			
Visitors			
Interns and volunteers			

5. OUTLINE OF SERVICE OFFERING

Describe the services offered by your science centre as in the table below:

No.	Service category	Activities per target public									
		Learners	Educators	Students	Tourists	Industry	Scientists and researcher	Science interpreter	Decision makers	General public	Journalists
	To promote science literacy										
	Enhance learner participation in STEMI										
	Identify and nurture youth talent and potential										
	Provide STEMI career education										

6. COMPETITIVE ENVIRONMENT

Describe the competitive environment in which your science centre operates by answering the following questions:

1. Are you in a competitive environment for the items in the table below, briefly elaborate?

Items Competing for	Competitive environment (yes or no)	Competitive advantage - Elaborate
Funding		
Customers		
Staff		
Members, partners		
Visitors		
Visibility in the community		
Media attention		

2. What differentiates your science centre from other centres?

7. OUTLINE OF OPERATIONAL PLANNING (BUSINESS AND FINANCIAL)

Please provide the following documents for the past three years:

1. Annual business plan and budget.
2. Audit reports.

8. MONITORING AND EVALUATION

1. How do you assess and ensure the quality of your service offering (e.g. maintenance or programme reviews)?
2. How do you track target publics' participation in your activities (produce evidence)?
3. Alignment with the goals of the network of science centres in South Africa (fitness for purpose):

a. Describe how your science centre is contributing to the goals of the network of science centres in South Africa in terms of the table below:

b. Describe and, where possible, provide evidence of the impact of your efforts to achieve the goals of the network of science centres in South Africa in terms of the following:

GOAL OF THE NETWORK OF SCIENCE CENTRES				
Target group	**Identifying and nurturing young people's talent and potential in STEM**	**Promoting science literacy among the youth and the population in general.**	**Enhancing learner participation and performance in STEM.**	**Providing young people with career education, particularly related to STEM.**
Educators				
Learners				
Permanent staff				
Interns and volunteer				
Surrounding community				
General public				
Researchers and scientists				
Journalists				
Science interpreters				
Tourists				
Decision-makers				
Industry				

a. Describe your plans to improve your efforts to achieve the goals of the network of science centres in South Africa in the table below

#	Goals of the network	Plans to improve efforts to achieve the goals
i)	Identifying and nurturing young people's talent and potential in STEM	
ii)	Identifying and nurturing young people's talent and potential in STEM	
iii)	Enhancing learner participation and performance in STEM.	
iv)	Providing young people with career education, particularly related to STEM.	

B. CRITERIA

1. GOVERNANCE AND PLANNING

The science centre plans for a sustainable future by taking its operational realities and responsibilities into consideration.

Comment on and provide evidence of how you focus on and develop in the areas of leadership, strategic planning, sustainability and future relevance, the regulatory environment, corporate governance and risk.

The questions below are intended to guide your response to assess if you meet the criterion. Provide answers to the questions applicable to your science centre i.e. not all questions may be relevant and you may add to the list should you wish to.

1.1 Leadership

Describe how you select, develop, and manage leaders for your science centre.

1. On what basis do you select members to the leadership team?
2. What impact has the leadership team had on the following?
    a) Science centre
    b) Staff
    c) Customers
    d) Stakeholders
    e) Surrounding community
    f) Meeting the strategic goals of the National Network of Science Centres.
3. Explain how you ensure sustainability regarding the leadership of the centre.
4. How active is the leadership team in marketing and promoting the science centre?
5. How active is the leadership team in networking with all stakeholders?

1.2 Strategic planning

Describe how your science centre evaluates itself at a strategic level, looking at its current state in detail and making decisions for the future based on this information.

1. What are your key core business, financial and human resource challenges and advantages with regards to organisational sustainability?

Key areas	Challenges	Advantages
Core business		
Financial resources		
Human resources		

2. Describe strengths, weaknesses, opportunities and threats (SWOT) of your centre in the table below:

Strength	**Weaknesses**
Opportunities	**Threats**

3. How have you responded and/or plan to respond to the outcome of the SWOT analysis done above?

Responses/plan	
Strengths:	**Weaknesses:**
Opportunities:	**Threats:**

1.3 Sustainability and future relevance

Describe what your science centre has in place to ensure its existence and impact in the next five years.

1. Does your science centre have a consistent, sustainable income?
2. If so, how do you guarantee it?
3. If not, what are you doing to obtain a sustainable income?
4. Does your science centre have more than one income stream?
5. If so, please specify the sources.

6. How are you staying abreast with technical and organisational innovations and implementing them where possible?
7. What does your science centre need to maintain relevance in five years' time?
8. How are you planning to meet these needs?
9. Describe the key needs that would be difficult to address.

1.4 Regulatory environment

Describe the regulatory environment within which your science centre operates.

1. Specify legal, financial, ethical, environmental, and health and safety regulations and standards that are applicable to your science centre

Legal	Financial	Ethical	Environmental	Health and safety regulations

2. How do you ensure compliance with these regulations?
3. Specify policies, accreditation or registration requirements that your science centre has to comply with?
4. How do you ensure compliance with these policies, accreditation or registration requirements?

1.5 Corporate governance

Describe the practices you have in place in your science centre to ensure the integrity of your people and processes.

1. State how you ensure that the following bad practices do not occur:
   a) Labour relations – Unfair labour practices
   b) Legal - Failure to satisfy contractual obligations
   c) Financial – Misappropriation of funds
   d) Ethical - Failure to uphold the constitution of the country
   e) Health and safety – Violation of health and safety requirements
   f) Environmental laws – Violation of environmental laws

2. How do you ensure that data gathered and stored as required by management is accurate and stored properly for informed decision-making and quick access?
3. How do you ensure that accurate reporting commitments to stakeholders are always met?
4. Are the information communication technology platforms (e.g. Internet access, record-keeping software, backup) you use adequate to assist you in managing your data correctly?

1.6 Risk and financial planning

Describe the science centre's plans and procedures for reducing risk.

1. List your top five (5) risks.
2. What mitigating plans have you implemented and/or will you implement to deal with these risks?
3. Do you have a risk register?
4. If so, how often do you review it?
5. Upload register.

2. SERVICE OFFERING

The science centre offers its customers services and products that have measured impact, value and success.

2.1. Basic Service Offering

List all exhibits, programmes and events that form part of your service offering within the context below:

2.1.1. STEMI Promotion

2.1.2. STEM Education Support

2.1.3. STEM Career Awareness

2.1.4. STEMI talent nurturing

2.2. Information about key service approaches

2.2.1. Exhibits

List and describe the exhibits used by your science centre, including themed exhibits and displays.

Name of exhibit	**Short description** ***Provide a short information about the exhibit***	**Hands-on**	**Permanent**	**Mobile**	**Facilitator**	**Target Audience** ***List them***	**Impact** ***Measuring instrument***	**Cost (R)**	**Sponsor** ***Provide name***	**Exhibit document**	**Maintenance plan**	**Outcomes** ***List them***

1. How many exhibits does your science centre have?
2. Provide the following information for each of them:
    a. What is the name of the exhibit?
    b. Provide a short description of the exhibit.
    c. Is the exhibit interactive/hands-on?
    d. Is the exhibit permanently placed or mobile?
    e. Has this exhibit been used for any outreach projects?
    f. What is the purpose of the exhibit?
    g. Who is the target audience?
    h. Does this exhibit require a facilitator?
    i. What are the learning outcomes?
    j. How do you market and promote this exhibit?
    k. How do you measure the impact of this exhibit in terms of its popularity, success in conveying knowledge, etc.?
    l. What is the cost of the exhibit?
    m. Who sponsors the exhibit?

n. Has this exhibit ever been on loan?
o. Are there documented building plans for this exhibit?
p. Are these plans being made available to other science centres and/or training workshops?
q. Are there any intellectual property rights associated with the building plans?
r. What are your future plans to improve this exhibit?
s. How do you ensure maintenance of this exhibit?
t. How do you share your experience with this exhibit (problems and successes) with other science centres?

2.2.2 Teaching and learning programmes

List and describe the curriculum-support programmes that your science centre offers.

Name of Programme	**Short description** ***Provide a short information about the programme***	**Number of Learners** ***Reached per annum***	**In-house**	**Outreach**	**Facilitator**	**Target Audience** ***List them***	**Impact** ***Measuring instrument***	**Cost (R)**	**Sponsor** ***Provide name***	**Programme document**	**Future plans**	**Outcomes** ***List them***

1. How many programmes does your science centre offer?
2. Provide the following information for each of them:
    a. What is the name of the programme?
    b. Provide a short description of the programme.
    c. What is the purpose of this programme?
    d. How many learners participate in this programme per annum?
    e. What is the school level of the participants?
    f. Is the programme available in house and/or through outreach?
    g. What are the learning outcomes (prescribed and other)?
    h. Who facilitates the programme (e.g. a permanent staff member, contracted educator, volunteer or an educator from a school)?
    i. Was the programme conceptualised in consultation with educators?
    j. Describe the learning materials used.
    k. What facilities are being used?
    l. What is the cost of the programme per learner?
    m. Who sponsors this programme?
    n. How does the programme serve the following groups?
        i. Educators.
        ii. Learners.
        iii. Permanent staff.
        iv. Interns and volunteers.
        v. Surrounding community.
        vi. General public.
        vii. Other stakeholders.
    o. How do you market and promote this programme?
    p. How do you measure the success of this programme?
    q. What are your future plans to improve this programme?

r. How do you ensure sustainability of this programme?
s. How do you share your experience with this programme (problems and successes) with other science centres?

2.2.3 Events

List and describe the events that your science centre has hosted in the last three years, including workshops, field trips, public talks, special days, open days, competitions and shows.

Name of Event	**Short description** ***Provide a short information about the event***	**Dates** ***when the event took place***	**Place Were** ***the event took place***	**In-house**	**Outreach**	**Target Audience** ***List them***	**Impact** ***Measuring instrument***	**Cost (R)**	**Sponsor** ***Provide name***	**Future plans**	**Outcomes** ***List them***

1. Provide the following information for each event in the past three years:
   a. What is the name of the event?
   b. When did the event take place?
   c. How often does this event take place?
   d. Provide a short description of the event.
   e. What is the purpose of the event?

f. Who is the target audience?
g. Who sponsors this event?
h. What are the learning outcomes (prescribed and other)?
i. Who facilitates the event (e.g. a permanent staff member, contracted educator, volunteer or an educator from a school)?
j. Specify and, where possible, provide examples of the learning materials distributed during this event.
k. What facilities are being used?
l. What has been the impact of this event on the following?
    i. Educators.
    ii. Learners.
    iii. Students
    iv. Tourists
    v. Industry
    vi. Journalists
    vii. Scientists and researchers
    viii. Decision-makers.
    ix. Permanent staff.
    x. Interns and volunteers.
    xi. Surrounding community.
    xii. General public.
    xiii. Other stakeholders.
m. Is the event available in-house and/or through outreach?
n. How do you market and promote this event?
o. How do you measure the success of this event?
p. What are your future plans to improve this event?
q. How do you ensure the sustainability of this event?
r. How do you share your experience with this event (problems and successes) with other science centres?

2.4. Science communication

Describe how your science centre communicates science to its target audience and how you ensure the quality of this communication.

1. Which languages do you use to communicate with your visitors?
2. Are the facilitators at your centre skilled to communicate easily with your visitors?
3. Is your science centre equipped to communicate science to people with disabilities? If so, how?
4. How do you assist facilitators to improve their science communication skills?
5. Where do you source the majority of the facilitators you use?
6. What other methods/media types do you use to communicate scientific knowledge and concepts to your audiences/visitors (e.g. posters, signage, interactive software etc.)?
7. What measures does your science centre have in place to evaluate the effectiveness of all communication to visitors?
8. What measures does you science centre have in place to ensure scientific accuracy of all communication to visitors?
9. How do you ensure that an engaging two-way communication between science communicators and visitors exists?

2.5. Information Communication Technology (ICT)

1. How do you ensure that the ICT tools are well-maintained, and are functioning properly?
2. How often are your ICT tools (Including software) upgraded?
3. How often are the data on the administrative computers backed up?
4. Do you have ICT tools to enhance the promotion of STEMI?
5. Specify STEMI promotion areas in which your science centre currently uses ICT tools.
    a. STEM education support
    b. Popularization of science
    c. STEM career awareness
    d. STEMI talent nurturing
6. How do you ensure that the ICT tools are well-maintained, and are functioning properly?

3. PEOPLE

The science centre manages all its key relationships in such a way to ensure efficiency, sustainability, service and impact.

Describe and provide evidence of how you recruit, manage and develop new staff, as well as how you involve and manage other stakeholders.

The questions below are intended to guide your response to demonstrate that you meet the criterion. They should be used as appropriate to your science centre, i.e. not all questions may be relevant and you may in some instances wish to add to the list.

3.1 Staff profile

Describe the composition of your staff, including all permanent and temporary staff, interns, volunteers, student assistants and contractors, as well as any others involved with your centre on a regular basis.

Provide input for ***each member*** of your staff and provide substantiating documentation where possible (Table):

1. Age.
2. Position in organization.
3. Gender.
4. Race
5. Home language
6. Science qualification(s) and area of specialisation
7. Other qualifications and areas of specialisation
8. Special training in science communication.
9. Years of service in science engagement.
10. Skills.
11. Career path.
12. Developmental gaps and/or opportunities.
13. Key factors that motivate the person to engage in accomplishing your mission.
14. Any special health and safety requirements (including disability) relevant to occupation.

3.2. Interns, volunteers and exchange programme volunteers

Describe how you manage, develop and apply the skills of interns and volunteers.

1. How many of the following have been active at your centre in the last year?
    a. Interns
    b. National Youth Service volunteers.
    c. Independent volunteers.
    d. Volunteers from abroad.
    e. Exchange programme participants.
    f. Other, please specify.
2. How do you utilise them in your centre?
3. How do you train them?
4. How do you manage them?
5. What opportunities are there for them to help your centre innovate and change for the better?
6. What value do these interns and volunteers add to your centre?
7. How many interns and volunteers that your centre has previously hosted have obtained permanent employment at science centres?
8. How many interns and volunteers that your centre has previously hosted are still involved with science centres or related activities?

3.3. Specialists

Describe how you involve other science centres or appropriate specialists in your centre.

1. Do you employ or involve local people and/or foreigners in your science centre that could be regarded as leaders in their field of expertise (e.g. exhibit builders, event managers)?
2. If so, how have you managed to get them on board?
3. Do you share their input and/or expertise and/or availability with other science centres?

3.4. Staff recruitment

Describe your selection and employment process.

1. How do you find, recruit and place staff?
2. Briefly describe your staff retention strategy.
3. How do you ensure that they live values, culture, mission and vision of the science centre?

3.5 Succession planning

Describe how you plan for future needs in terms of staff.

1. Is the succession policy of your science centre documented?
2. If yes, please upload.
3. Are you investing in the development of the future leaders?
4. Do you have a succession plan for each key staff member?

3.6 Performance management

Describe what performance management mechanisms you have in place to ensure efficiency and staff satisfaction.

1. How do you manage the performance of staff?
2. Do you have performance review sessions at least twice a year for every staff member?
3. Do you align staff performance output with purpose of the science centre?
4. Do you recognise good performance and reward it accordingly?
5. Do you have incentives in place for top performance and consequences for poor performance?
6. Do you align the organisation's performance outcomes with the mission and purpose of the science centre?

3.7 Organisational learning

Describe how your science centre as a whole learns.

1. Do you facilitate knowledge transfer between staff?
2. Do you facilitate skills training, mentoring and coaching for staff?
3. Do you ensure that organisational learning is continuous?
4. How is knowledge about the science centre operations shared?

3.8 Learning and skills development for internal staff

Describe how you develop your people.

1. Do your staff members have opportunities to participate in formal career and skills development programmes, e.g. conference attendance, exchange programmes, study visits, training courses, seminars and workshops?
2. How many of your staff members have participated in such developmental programmes in the past three years?
3. How do you stay informed about available programmes and opportunities?
4. How do you identify your staff member's learning and development needs?
5. Do you budget for these programmes?
6. How do you fund these programmes?
7. How do you keep track of which staff have participated in which programmes?
8. How do you raise awareness about and encourage participation in career and skills development programmes?

3.9 Stakeholder management

Describe how you manage your stakeholder relationships.

1. How do you follow-up and collect feedback regarding your service offering from each of the following?
   a. Educators
   b. Learners
   c. Permanent staff
   d. Interns and volunteers
   e. Surrounding community
   f. General public
   g. Journalists
   h. Students
   i. Tourists
   j. Industry
   k. Scientists and researchers
   l. Science interpreters
   m. Decision makers
   n. Partners
   o. Sponsors.
   p. Other science centres
   q. Governmental stakeholders
   r. Practitioners' associations
   s. Other stakeholders
2. How do you use the feedback gathered to improve your service offering?
3. How do you wish to influence each of these stakeholders?
4. How do you measure the change you have made on your stakeholders?
5. How do you plan to ensure that the change you have made on each of these stakeholders is sustained?

4. COMMUNICATION

The communication methods, channels, and technology used by the science centre effectively promote its visibility and brand, its interaction with stakeholders and the quality of its service offering.

Comment on and provide evidence of the effectiveness of communication channels, marketing, and corporate communication, science communication, information management, and information communication technology.

The questions below are intended to guide your response to demonstrate that you meet the criterion. They should be used as appropriate to your science centre, i.e. not all questions may be relevant and you may in some instances wish to add to the list.

4.1 Communication channels

Describe how you use the communication channels that are available to you, such as email, text messaging, websites, social media (e.g. Facebook, Twitter and blogs), fax, print and face-to-face forums.

1. Which channels do you regularly use to communicate and manage relationships with the following?
    a. Educators
    b. Learners
    c. Permanent staff
    d. Interns and volunteers
    e. Surrounding community
    f. General public
    g. Students
    h. Journalists
    i. Industry
    j. Decision-makers
    k. Scientists and researchers
    l. Tourists
    m. Science interpreters
    n. Partners
    o. Sponsors.
    p. Other science centres
    q. Governmental stakeholders.
    r. Practitioners' associations
2. How do these channels promote understandable, two-way communication and transparency?
3. How often do you evaluate the effectiveness of these channels?

4.2 Marketing and corporate communication

Describe how you promote your centre and service offering using marketing and branding initiatives.

1. What makes your science centre different from others?
2. To whom should you communicate your science centre's uniqueness?
3. To whom do you communicate your science centre's uniqueness?
4. Do you incorporate your uniqueness in your science centre's corporate identity, which includes all aspects of external communication such as your logo, mission statements and annual reports?
5. What other methods and/or approaches do you use to communicate your uniqueness?
6. Why are you using these channels specifically?
7. Are you aware of successful marketing strategies implemented by other science centres?
8. Do you use any of the following opportunities to market and/or promote your brand?
    a) Community involvement or outreach projects.
    b) Conferences.
    c) Publications.
    d) Media (e.g. Print, television)
    e) Website
    f) Other social media.
    g) Public talks.
    h) Other, specify.

4.3 Information management

Describe how you manage the information that flows into and out of your science centre so that its quality is ensured and so that knowledge sharing takes place.

1. How often do you produce publications?
2. How and where do you distribute these?
3. How do you produce information in-house?
4. How do you collect information?
5. How and where do you store collected information?
6. How do you share information with your stakeholders?
7. How do you share information and knowledge with other science centres?
8. Do you keep up to date with industry trends and the most recent news and challenges that national and international science centres face?
9. Are you participating in creating a central knowledge base accessible by all science centres?
10. Is there enough opportunity to share your experiences and to learn from others?

4.4 Information Communication Technology

Describe the state of your information communication technology in enhancing internal and external communication and information management in your centre.

1. How often are your ICT tools (including software) upgraded?
2. How often are the data on the administrative computers backed up?
3. Is your internet connectivity complementary to your operational communication needs?
4. If you have inadequate or no internet connectivity, indicate what you would use it for if it were provided?
5. Does every staff member have access to a computer?

4.5 Science Communication

The communication methods, channels and technology used by the science centre effectively promote its visibility and brand, its interaction with stakeholders and the quality of its service offering. Comment on and provide evidence of the effectiveness of communication channels, marketing and corporate communication, science communication, information management, and information communication technology.

The questions below are intended to guide your response to demonstrate that you meet the criterion. They should be used as appropriate to your science centre, i.e. not all questions may be relevant and you may in some instances wish to add to the list.

1. Which languages do you use to communicate with your visitors?
2. Are the facilitators at your centre skilled to communicate easily with your visitors?
3. Is your science centre equipped to communicate science to people with disabilities? If so, how?
4. How do you assist facilitators to improve their science communication skills?
5. Where do you source the majority of the facilitators you use?

6. What other methods/media types do you use to communicate scientific knowledge and concepts to your audiences/visitors (e.g. posters, signage, interactive software etc.)?
7. What measures does your science centre have in place to evaluate the effectiveness of all communication to visitors?
8. What measures does your science centre have in place to ensure scientific accuracy of all communication to visitors?
9. How do you ensure that an engaging two-way communication between facilitator and visitors exists?

5. QUALITY MANAGEMENT AND BENCHMARKING

The monitoring and evaluation system implemented ensures the quality of all products, the adherence of the centre to the management processes it has adopted, and the compliance of its facilities with health and safety, and disability regulations.

Describe how your science centre manages facilities and adherence to appropriate standards and benchmarks.

The questions below are intended to guide your response to demonstrate that you meet the criterion. They should be used as appropriate to your science centre, i.e. not all questions may be relevant and you may in some instances wish to add to the list.

5.1 Standards and evaluation

Describe what standards and evaluation mechanisms you have in place to ensure quality in your science centre.

1. What are the standards you set for your science centre in terms of improving and maintaining the quality of the following?
   a. Your facility and premises.
   b. Your staff (e.g. facilitators, volunteers, contractors).
   c. Internal business processes (e.g. performance management).
   d. Service offerings (e.g. exhibits, programmes and events).
2. How do you assess your science centre against these standards?
3. What is the outcome of the last assessment you undertook?
4. Do you benchmark the outcome of these evaluations against other science centres and general best practice in the industry?

5.2 Procurement or Manufacturing

Describe how you manage and maintain a cost-effective procurement or acquisition system.

1. How do you manage the procurement or acquisition of the following?
   a. Facilities and premises.
   b. Services.
   c. Exhibits.

    d. Equipment.
    e. Materials (consumables and other).
2. How do you ensure cost-effectiveness?
3. Do you have an updated, accessible database of suppliers?

5.3 Asset management

Describe how you effectively manage all your assets.

1. Do you have updated, accessible lists of all assets?
2. Upload asset register.
3. How do you manage and maintain the following assets?
    a. Facility and premises
    b. Exhibits
    c. Equipment
4. How do you ensure cost-effective maintenance?
5. Which items on your asset list are adequately insured?
6. What is your insurance situation for items that you borrow and lend?
7. If your insurance cover is not sufficient, why not?

5.4 Health, safety and environment

Describe the health, safety and environment situation in your science centre.

1. How do you ensure a safe and secure environment?
2. Which staff member is responsible for ensuring that your science centre complies with all the health, safety and environment regulations applicable?
3. Are all staff members trained in applicable health, safety and environment procedures?
4. How often do you assess your environment to ensure safety?
5. How often do you review your health, safety and environment procedures?
6. How accessible is your science centre to visitors with disability?

6. EVALUATION PROCESS: SCORING

6.1 EVALUATION CRITERIA

The evaluation section covers the five criterion areas, which will form part of both self-evaluation and peer-evaluation process, which will be accompanied by verifiable proofs (where necessary). Each section has been assigned a weighting to reflect the relative importance of such criterion to the Evaluation Panel members.

Table 1: The five areas with their weighting

	SECTION	INDICATORS	SECTION WEIGHT (%)
1	Governance and planning	Leadership	30
		Strategic planning	
		Sustainability and future relevance	
		Regulatory environment	
		Corporate governance	
2	Service offering	Exhibits	30
		Teaching and learning programmes	
		Events	
3	People	Staff profile	20
		Staff recruitment	
		Succession planning	
		Performance management	
		Organizational learning	
		Career and skills development	
		Interns, volunteers and exchange programme participants	
		Specialist	
		Stakeholder management	
4	Communication	Communication channels	10
		Marketing and corporate communication	
		Science communication	
		Information management	
		Information communication technology	
5	Quality management and benchmarking	Standards and evaluation	10
		Procurement/manufacturing	
		Asset management	
		Health and safety	

6.2 FORMULA

The formula was applied to calculate the weighting for each section against the total score of the system. The Final Score, S_{Final} is given by:

$$S_{Final} = \sum S_{Cont} \quad (1)$$

where

- S_{Cont} : Section contributed score
- S_{weight} : Section Weight in % (see Table 1)
- $\sum(S_{indicators})$: Sum of individual indicator score

$$S_{Cont} = S_{weight} \times \sum(S_{indicators})$$

6.3 THRESHOLD

The Total Score for the current system is 100, which after calculations using Equation (1), resulted in the Final Score of 24 points. The overall threshold in this exercise is 40 % (9.6 points) of the Final Score. Science centres whose final evaluation points found to be at 9.6 – 24 will proceed to be accredited according to the criterion in the Table 2. Any score below 9.6 will not be accredited, but those centres will be assisted according to the needs for development to be addressed in order for them to meet the threshold.

6.4 ACCREDITATION CATEGORIES

Table 2: Below is the analysis of the membership status levels

Final Score	Categories	*Description	Comments
9.6 – 15	Level 1	Budding	Beginning and/or showing potential
16 – 20	Level 2	Emerging	Doesn't fully satisfy key corporate governance issues & service offering
21 – 24	Level 3	Full Service / Limited Service	Satisfy key corporate governance issues & address all four strategic focus areas Meet minimum space requirements

*Description: discribes the Level as per Evaluation Report

6.5 ANNEXURE A: SCORE BOARD

SECTION	SECTION'S CONTRIBUTION	INDICATORS SCORE RANGE	SCORE DESCRIPTION		PUT-IN SCORES	SECTION SCORE	SECTION (%)	FINAL SCORE
			Scores	Descriptors				
Governance and planning	0.3	**Executive Leadership (0 – 5):**	0	No information	5	30	9.0	24
		• *Selection of leader(s)* • *Leadership structure* • *Involvement of leader(s) (in reference to Q2&5)* • *Marketing and Promotion* • *Documents attached for Question 3*	1	Selected only				
			2	Selected and structure				
			3	Selected + structure + involved				
			4	Selected + structure + involved + marketing and promotion				
			5	All + *Documents attached for Question 3*				
		Strategic planning (0 – 5)	0	No Strategic Plan exists	5			
		• *Core Business - described* • *Financial and human resources - described* • *Operational - described* • *SWOT Analysis*	1	Any One item addressed				
			2	Any Two items addressed				
			3	Any Three items addressed				
			4	Any Four items addressed				
			5	Any Four items addressed + Strategic Plan + verifiable Proof				
		Sustainability and future relevance (0 – 5)	0	No information	5			
		• *Sustainable income exists* • *Sustainable income does not exist* • *5-year sustainability plan*	1	Sustainable Income do not exist + provide a plan or Income exists +Specific (who?)				
			2	Technical and organisational innovation described				
			3	Score 2 +5-year plan +Q7				
			4	Score 3 + Q8 or Q9				
			5	Score 3 +Q8+Q9				
		Regulatory environment (0 – 5)	0	No Regulatory Environment exist	5			
		• *List of Regulatory environment(s)(as per No 1)* • *Compliance with regulations*	1	Regulatory Environment exist / or Policies+ verifiable Proof (without Compliance)				
			2	Regulatory Environment exist + Compliance + verifiable Proof (as presented to the peer reviewers)				

		• *Policies/accreditation/registration requirement(s)* • *Compliance with policies (as listed in No 3)*	3	Regulatory Environment exist + Compliance + verifiable Proof (as presented to the peer reviewers) + Policies and/accreditation /registration certificate			
			4	Regulatory Environment exist + Policies + Compliance + verifiable Proof by peer reviewers			
			5	Score 4 + excellent best practice of compliance			
		Corporate governance (0 – 5)	0	No Corporate Governance exist	5		
		• *Bad Practices do not occur (Q1 , a-f)* • *Data Management, Reporting commitments and ICT platforms (Q2, Q3 and Q 4)*	1	Some have been addressed (at least 2)			
			2	Most have been addressed (at least 4)			
			3	All have been addressed			
			4	DATA MANAGEMENT AND REPORTING			
			5	1 - Some have been addressed (2 addressed) 2- All have been addressed			
		Risk (0 – 5)	0	No information	5		
		• *List the Risks* • *Mitigation Plan* • *Risk Register* • *Risk Register review* • *Plans review and updated process*	1	List of Risks			
			2	List of Risks+ Mitigation Plan			
			3	List of Risks+ Mitigation Plan+ Risk Register			
			4	Score 3 + Verifiable Proof to peers			
			5	Score 4 + Plans review and updated process			
Service offering	0.3	**Exhibits (0 – 10)**	0	None of the Strategic Goals addressed	10	30	9.0
		• *STRATEGIC GOALS RELEVANCE* *STEMI Promotion* *STEM Education Support* *STEM Career Support* *STEMI Talent nurturing* • Majority Functionality (at least 75%) • Hands On/Interactivity • Maintenance Plan exist • *Exhibit Document* • *Insurance* • *Evaluation Learning Outcome*	1	One of the Strategic Goals addressed			
			2	Two of the Strategic Goals addressed			
			3	Three of the Strategic Goals addressed			
			4	Four of the Strategic Goals addressed			
			5	Score 4 + Majority functioning (at least 75%)			
			6	Score 5 + Hands on/Interactive as verified by Peers			
			7	Score 6 + Maintenance Plan exist as verified by Peers			
			8	Score 7 + Exhibit document as verified by peers			
			9	Score 8 + Insurance			
			10	Score 9 + Evaluation Learning Outcome			

		Teaching and learning programmes (0 – 3)	0	None of the Strategic Goals addressed	10		
		• *STRATEGIC GOALS RELEVANCE* • *STEMI Promotion* *STEM Education Support* *STEM Career Support* *STEMI Talent nurturing* • *Curriculum relevance* • *Reach (Number reached- scope)* • ***Learning Outcomes*** • *Marketing the programme* • *Data Management* • ***Evaluation of the programme***	1	One of the Strategic Goals addressed			
			2	Two of the Strategic Goals addressed			
			3	Three of the Strategic Goals addressed			
			4	Four of the Strategic Goals addressed			
			5	*Score 4 + Curriculum Relevance*			
			6	Score 5 + Reach			
			7	Score 6 + Learning Outcomes			
			8	Score 7 + Marketing			
			9	Score 8 + Data Management verified			
			10	Score 9 + Evaluation of the programme			
		Events (0 – 10)	0	None of the Strategic Goals addressed	10		
		• *STRATEGIC GOALS RELEVANCE* • *STEMI Promotion* *STEM Education Support* *STEM Career Support* *STEMI Talent nurturing* • *Purpose of Event(s)* • *Evaluation of the Event(s)* • *Marketing the Event(s)* • *Reach* • *Events Calendar* • *Quality Data Management - verifiable*	1	One of the Strategic Goals addressed			
			2	Two of the Strategic Goals addressed			
			3	Three of the Strategic Goals addressed			
			4	Four of the Strategic Goals addressed			
			5	*Score 4 + Purpose of events (s)*			
			6	Score 5 + Marketing			
			7	Score 6 + Evaluation			
			8	Score 7 + Reach			
			9	Score 8 + Events Calendar			
			10	Score 9 + Quality Data Management as verified by Peers			
People	0.2	**Staff profile (0 – 2)**	0	No information	2	20	4.0
		• *Composition of staff listed and qualifications described* • *Developmental gaps and persons with disabilities identified*	1	Composition of staff and qualifications description exist			
			2	Composition of staff description + qualifications + Developmental gaps and opportunities and/or Employment of people with disabilities			

Staff recruitment (0 – 2)	0	No information / no processes in place	
• *Selection and employment process* • *Retention strategy*	1	Selection and/or employment process exists	
	2	Selection or employment process exists + Retention strategy exists	
Succession planning (0 – 2)	0	No information	2
• *HR policy with succession plan in place* • *Investing in leadership development*	1	HR policy with Succession Plan + Verifiable Proof	
	2	Succession Policy + investing in leadership development	
Performance management (0 – 2)	0	No information	2
• *Performance review session* • *Performance management mechanisms*	1	Performance management mechanisms exist + own template attached	
	2	Performance management mechanisms + Performance review session exist	
Organizational learning (0 – 3)	0	No information / relevant information	3
• *Selection criteria for staff's needs in place* • *Skills training, mentoring and coaching in place* • *Knowledge-sharing in place*	1	Selection criteria for staff in place	
	2	Selection criteria + Skills training in place+ Mentoring & coaching	
	3	Selection criteria + Skills training in place + Mentoring & coaching + Knowledge-sharing	
Learning and skills development (0 – 3)	0	No information / relevant information	3
• *Formal skills development Plan with budget* • *Selection criteria of the staff* • *Skills development tracking process in place*	1	Formal skills development plan with budget in place	
	2	Formal skills development plan + Selection criteria	
	3	Formal skills development + Selection criteria + tracking of staff development	
Interns, volunteers and exchange programme volunteers (0 – 2)	0	No information / relevant information	2
• *Job description for interns, volunteer and exchange programme* • *Opportunities to innovate and change the centre in place*	1	Job Description + Verifiable Proof	
	2	Job Description + Opportunities to innovate and change the centre in place + Verifiable Proof(s)	
Specialists (0 – 2)	0	No information / relevant information	2
• *Experts/Specialists from other science centres* • *Process of involving them* • *Knowledge-sharing with other centres*	1	There are experts/specialists	
	2	Experts/specialists + Process of involving them + Knowledge-sharing	
Stakeholder management (0 – 2)	0	No information / relevant information	2

		• *Feedback process* • *Evaluation and analysis tool*	1	Feedback process + Verifiable Proof			
			2	Feedback process + Evaluation and analysis tool in place + Verifiable Proof(s)			
Communication	0.1	**Communication channels (0 – 2)**	0	No information / relevant information	**2**	**10**	**1.0**
		• *Communication channels exist* • *Channels are effective (peers to verify)*	1	Communication channels exist			
			2	Communication channels + verification of effectiveness of communication channels from peers			
		Marketing and corporate communication (0 – 2)	0	No information / relevant information	**2**		
		• *Corporate identity in place* • *Visibility of corporate identity/Effectiveness of communication channels*	1	Corporate identity in place			
			2	Corporate identity in place and visible/effective			
		Science communication (0 – 3)	0	No information / relevant information	**3**		
		• *science communication skills development* • *methods used to communicate science* • *quality control for accuracy of science communicated*	1	Skills development			
			2	Skill development + Methods			
			3	Skill development + Methods + quality control process			
		Information Management (0 - 1)	0	No information / no systems in place	**1**		
		• *Systems and storage facilities exist for collected information (ref-Q5)*	1	Systems exist			
		Information communication technology (0 – 2)	0	No information / relevant information	**2**		
		• *ICT infrastructure + connectivity exists* • *Data management and Backup systems*	1	Information communication technology			
			2	Information communication technology + Reliable connectivity and Backup			
Quality management and benchmarking	0.1	**Standards and evaluation (0 – 2)**	0	No information / relevant information	**2**	**10**	**1.0**
		• *Quality standards* • *Evaluation mechanism*	1	Quality standards or evaluation mechanism			
			2	Quality standards and evaluation mechanism			
		Procurement/manufacturing (0 – 2)	0	No information / relevant information	**2**		
		• *Procurement system(s) in place* • *Evidence of payment and requisition form templates*	1	Procurement system(s) in place			
			2	Procurement system(s) in place + evidence of payment and requisition forms			

		Asset management (0 – 3)	0	No information / relevant information	3			
		• *Asset register available* • *Asset management system in place* • *Asset insurance in place*	1	Any one from the list				
			2	Any two from the list				
			3	All				
		Health and safety (0 – 3)	0	No information / relevant information	3			
		• *Safety Officer* • *Accessible to visitors with disabilities* • *Occupational Health and Safety (OHS) adherence (to be verified by peers)*	1	Safety Officer				
			2	Any two				
			3	All + Verifiable Proofs				
				TOTAL SCORE		100	24	

7 REFERENCES

The following documents guided and informed the compilation of this document:

1. Department of Science and Technology. *Youth into Science Strategy*, 2006
2. Department of Science and Technology. *National Roll-Out Plan to Establish the Network of Science Centres in South Africa (2007/08 – 2032/33)*
3. Department of Science and Technology. *National Norms and Standards for a Network of Science Centres in South Africa, 2005*
4. Baldridge National Quality Program. *Criteria for Performance Excellence 2009 – 2010*
5. Council on Higher Education. *Criteria for Institutional Audits*, 2004