SciFest Ltd

Strategic Plan 2014 - 2018

September 2014



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Executive Summary

SciFest is a programme of science fairs for second-level students run locally in schools and regionally in the Institutes of Technology. The aim of the project is to encourage a love of science, technology, engineering and maths through active, collaborative, inquiry-based learning and to provide a forum for second-level students at local/regional level to present and display their scientific investigations. Being free to enter and locally/regionally based SciFest is highly accessible and inclusive.

The project has grown steadily since its launch nationwide in 2008 and now consists of four distinct strands: SciFest@School – in-house science fairs run in individual schools; SciFest@College – regional science fairs run in the Institutes of Technology and St Mary's College, Derry; SciFest@SFI Discover – a national final competition for the winners from the regional fairs; and SciFest@Intel ISEF – winners from the national final compete in the Intel International Science and Engineering Fair (ISEF) in the USA.

SciFest has seen an average annual increase in participation of approximately 25%. In 2008 some 1612 students entered 680 projects from 100 schools. In 2014 over 6000 students from 243 schools entered almost 2600 projects. Although SciFest caters for a wide diversity of students many of the projects entered are of a high standard as evidenced by success in Intel ISEF; in the three years that the project has been affiliated to Intel ISEF SciFest students have brought home a total of four awards.

SciFest is managed by a not-for-profit company, SciFest Ltd, set up in 2012. The company reports to the SciFest Board which includes representatives of academia and industry. Prior to the setting up of the company SciFest was managed by the current CEO and founder of the project, Sheila Porter, on secondment from her teaching position. It is currently managed on a day-to-day basis at national level by an executive team. The SciFest programme is organised locally by teachers in the schools and regionally by the regional coordinators in the colleges hosting the SciFest@College science fairs.

In developing its strategic plan for the period 2014-2018 the SciFest Board highlighted the fact that SciFest has many strengths and opportunities. These include an existing set of strategically important activities and materials for teachers and students, and a supportive set of important allies and stakeholders. The SciFest programme is based on a tried and tested model which is highly scalable and SciFest is a strong brand in the Irish educational landscape. With its promotion of inquiry-based learning and the development of 21st century skills SciFest is seen to be highly supportive of the aims of the new junior cycle programme of the Department of Education and Skills.

SciFest's mission is to 'provide an inclusive and accessible platform for students in Irish schools to explore the STEM disciplines in an investigative way and to present their findings to a wider audience, thus supporting the development of key skills, including critical thinking, problem-solving, communication and collaboration'. In furtherance of its mission over the next four years SciFest has identified three key strategic objectives: maintain and sustainably grow SciFest; further promote and protect the SciFest brand; establish an effective communications strategy. A series of carefully prioritised actions have been agreed to achieve these key objectives by the end of 2018 (Priority1 actions are listed below). With these in place there is every reason to believe that the SciFest project can continue to grow and support increasing numbers of Irish students to develop and exhibit their STEM projects while advancing their understanding and skills in the STEM space.

Priority 1 Key Strategic Objectives (KSOs)

KSO1 Maintain and sustainably grow SciFest

1. Increase participation in SciFest@School from 35 schools/3100 students in 2014 to 175 schools/ 15,000 students by 2018
2. Increase team of support teachers to 15 by 2018
3. Budget: Grow from €130k currently to €515k by 2018

KSO2 Further promote and protect the SciFest brand

1. Review current communications plan
2. Produce corporate video for business presentations

KSO3 Establish an effective communications strategy

1. Produce 3-year media strategy
2. Focus on key stakeholders for funding and support: Department of Education and Skills, SFI, Corporates
3. Cooperate with other SFI initiatives – ESERO, Smart Futures

SciFest Strategic Plan

1. Introduction

This strategic plan for SciFest Ltd summarises the outcome of an analysis and planning process carried out over the period November 2013 to September 2014. It is intended to provide, in summary form, a set of strategic directions and activities that will form the basis of SciFest's work in the promotion of science, technology, engineering and maths (STEM) in the period from 2014 to 2018.

The process was informed by feedback from teachers, students and the regional coordinators in the Institutes of Technology and by input and suggestions from the Executive and from the Board, in particular the Board's sub-committee on finance.

2. Mission, Objectives and Target Audience

Vision

By 2018 SciFest will be recognised as a key player in the promotion of inquiry-based STEM education in Irish schools.

Mission

SciFest's mission is to provide an inclusive and accessible platform for students in Irish schools to explore the STEM disciplines in an investigative way and to present their findings to a wider audience, thus supporting the development of key skills, including critical thinking, problem-solving, communication and collaboration.

Aims

- SciFest aims to encourage a love of science, technology, engineering and mathematics through active, collaborative, inquiry-based learning
- SciFest aims to be highly accessible to its target audience by being locally and regionally based and by being free to enter
- SciFest aims to create a structure, including a diversified funding stream, capable of sustaining the ongoing expansion and development of the project

Objectives

As a means to achieving its aims SciFest has identified three key strategic objectives (KSOs). These are:

- KSO1 Maintain and sustainably grow SciFest
- KSO2 Further promote and protect the SciFest brand
- KSO3 Establish an effective communications strategy

3. Background and Context to Strategic Planning Process

SciFest developed 'organically' from its launch nationwide in 2008. Up to 2012 it was managed exclusively by a teacher – the current CEO – on secondment from her teaching post. As secondment is subject to annual renewal and limited to a maximum of five years this was clearly not a sustainable model. The establishment of SciFest as a limited company in 2012 brought an element of stability and sustainability to the project. However, the lack of a sufficient and reliable funding stream, coupled with the rapid and ongoing expansion of activity, continues to present a significant challenge. The lack of a coherent strategic plan is seen by the Board as a major impediment to the management of the issues facing the new company.

Issues and factors impacting on the planning process include the following:

a). Finance. This is key to a successful outcome to the planning process; it is currently under consideration by the Finance Sub-committee.

b). Priorities. The establishment of priorities, with appropriate time frames, is important in any planning process. It is especially so in this case, given the rapidly expanding demands and the limited resources, both human and material.

c). Educational environment. The introduction of the new junior cycle programme and the increased emphasis in the science subject specifications on project work, problem solving, etc., provides a unique opportunity for SciFest to support the national curriculum and capitalise on the experience of the past six years. It may also constitute a threat – if project work becomes subject to overly restrictive criteria for assessment purposes there may be little incentive for students to undertake SciFest projects.

d). Political. This factor is related to the previous one. To what extent will the DES and/or the SEC support the aims of SciFest in the context of the new junior cycle programme?

e). Economic. The current economic crisis has resulted in a greatly increased workload for teachers while imposing significant reductions in salary. It has also resulted in increased casualisation of the profession. None of these outcomes is conducive to undertaking the additional work involved in running a SciFest@School or entering students for a SciFest@College. Institute of Technology staff who organise SciFest@College events have been subject to similar disimprovements in their working conditions.

4. The Scifest Programme

SciFest was the brainchild of the current SciFest CEO, Sheila Porter. Based on her experience of the BT Young Scientist and Technology Exhibition and her involvement with the Intel Educator Academy in the United States, she approached the Institute of Technology Tallaght (ITT) in 2006 with an idea for a local science fair for second level students. A successful pilot SciFest science fair was hosted by ITT in 2006 and repeated in 2007. With funding from the Discover Science and Engineering programme and Intel Ireland Sheila Porter was seconded from her teaching post in Loreto College, St Stephen's Green, to Intel in September 2007 to work on SciFest on a full-time basis.

The model proved highly scalable and cost effective. In 2008 SciFest ran in nine Institutes of Technology (IoTs). In 2009 the number of IoTs involved increased to 14 and an additional SciFest was hosted in Northern Ireland. With the numbers increasing so rapidly it was decided to expand the SciFest project in 2011 by introducing two new levels of participation, school-based (SciFest@School) and a national final.

In 2012 Sheila's secondment ended, five years being the maximum allowed by the Department of Education and Skills, and she decided to resign her teaching post and continue to work with SciFest. With her husband, George Porter, she set up a not-for-profit company, SciFest Ltd, to run the SciFest project.

The project has evolved steadily over the years since its launch nationwide in 2008 and it now consists of four distinct strands:

1. Local – SciFest@School

SciFest@School is where second-level schools host their own in-house SciFest science fair. Support for the event is provided by SciFest in the form of a SciFest Science FairToolkit, resources and BKMs on the SciFest website. This strand was introduced in 2011 and there has been strong demand from schools to participate. In 2013 a total of 22 schools participated, more than double the number of schools that participated in 2012. In the 22 schools some 2322 students presented 941 projects. There was a further increase in the number of schools participating at this level in 2014 of approximately 60%, including the first in Northern Ireland.

2. Regional – SciFest@College

This was the first strand of the project to be initiated, as a pilot in 2006 and nationally in 2008. In this strand the Institutes of Technology host one-day SciFest science fairs which are open to all second-level students. A SciFest fair consists of a competition and exhibition of projects, a prize-giving ceremony, and may also include a selection of science talks, science demonstrations in the college laboratories and advice on careers in STEM and courses available in the college. SciFest@College affords students the opportunity to visit a third-level college, view the facilities and get information on the various STEM courses available. The fact that the event is regionally based and has open and free entry means that SciFest is both accessible and inclusive. The project also has a cross-border aspect as the University of Ulster has also hosted a SciFest fair at its Magee Campus in Derry (this event moved to the nearby St Mary's College in 2014 to accommodate a greatly expanded event) and some students from schools in Northern Ireland cross the border to participate in fairs in the Republic.

3. National - SciFest@SFI Discover

The overall winner from each SciFest@College event is invited to exhibit at a national SciFest science fair. The first national event was held in Intel in 2008 (SciFest@Intel). The first event to be held under the auspices of SciFest Ltd was held in the Science Gallery, Trinity College, in 2013, while the 2014 event moved to the Marino Conference Centre in the Marino Institute of Education.

In 2011, SciFest having successfully affiliated to the Intel International Science and Engineering Fair (ISEF), the SciFest@Intel event became a national final competition. At a national final the projects are evaluated by an expert panel of judges from academia, enterprise and government. Each of the exhibitors is presented with an Excellence in STEM award in recognition of their success at the regional fairs and the Grand Award winners receive an all-expenses-paid trip along with their teacher, who receives a teacher of excellence award, to represent Ireland at the Intel ISEF which is held annually in May in the USA.

4. International – SciFest@Intel ISEF

SciFest participated in the Intel ISEF for the first time in May 2012. Intel ISEF is a one-week science fair, held annually in the USA since 1950, at which some 1800 students from over 440 affiliated science fairs in approximately 70 countries, regions and territories compete for a range of prizes. The projects are judged by a 1200-strong panel of highly-qualified judges. The Grand Award winners of the SciFest 2011 national final competed in Intel ISEF 2012 in Pittsburgh, Pennsylvania and came second in their category. Two SciFest projects participated in Intel ISEF 2014 and between them received a total of three awards.

The following tables show the growth of participation in SciFest since its launch nationwide in 2008.

Table 1. Growth of participation in the SciFest@College strand of the project since its launch nationwide in 2008

Year	Students	% increase	Projects	% increase	Schools	% increase	Teachers	% increase
2008	1612		680		100			
2009	1980	23%	836	23%	160	60%	255	
2010	2649	34%	1097	31%	196	23%	291	14%
2011	2907	10%	1243	13%	197	1%	338	16%
2012	3379	16%	1487	20%	227	15%	367	9%
2013	3490	3%	1519	2%	233	3%	398	8%
2014	3586	3%	1562	3%	239	3%	410	3%

Table 2. Growth of participation in the SciFest@School strand of the project since its launch in 2011

Year	Students	% increase	Projects	% increase	Schools	% increase	Teachers	% increase
2011	522		180		5		5	
2012	911	75%	377	109%	10	100%	12	140%
2013	2322	155%	941	150%	22	120%	26	117%
2014	3154	36%	1332	42%	35	59%	41	58%

Table 3. Growth of participation in SciFest@School and SciFest@College combined* since 2008

Year	Students	% increase	Projects	% increase	Schools	% increase	Teachers	% increase
2008	1612		680		100			
2009	1980	23%	836	23%	160	60%	255	
2010	2649	34%	1097	31%	196	23%	291	14%
2011	3275	24%	1364	24%	199	2%	338	16%
2012	4059	24%	1754	29%	227	14%	367	9%
2013	5368	32%	2262	29%	236	4%	401	9%
2014	6059	13%	2594	15%	243	3%	417	5%

*The combined figures are less than the sum of those in the individual strands since a number of projects are entered in both strands.

5. The SciFest Structure

The SciFest project is managed by SciFest Ltd, a company limited by guarantee not having a share capital and having charitable status. It is overseen by a Board which is representative of the education and corporate sectors. The Board currently has nine members and is chaired by the President of DCU, Prof. Brian MacCraith. The day-to-day running of the company is undertaken by a full-time executive team. Occasional support is provided by a number of teachers, currently on a pro bono basis. At present the company has two sources of funding: a two-year grant from the SFI Discover programme and sponsorship from a number of companies and organisations; the main corporate sponsors are Intel Ireland, who have supported the project since its inception, and Boston Scientific. SciFest is proud to have as its patron the President of Ireland, Dr Michael D. Higgins.

SciFest@School science fairs are organised in-house by each school's science department. SciFest provides a number of prizes, certificates for all participating students and promotional materials. The SciFest teacher's pack contains advice on organising a science fair. Ideas for projects are provided to the school and further support is available on the SciFest website. In most cases SciFest provides one or two judges on the day for each fair.

The SciFest@College strand of the programme is organised by regional coordinators in the third-level colleges. Entry forms for each institute are made available on the SciFest website and students wishing to enter a project send a completed form to their local regional coordinator. The regional coordinators receive and collate the completed forms and take responsibility for all aspects of the organisation of the SciFest science fair on the day. They receive financial support from SciFest in the form of a grant based on the number of projects exhibited. Most coordinators also source local sponsorship to further support their event. Support from the Executive includes a database of available judges to supplement in-house judges, a database of available speakers, up to ten trophies and approximately €300 in prize money. The Executive maintains contact with the coordinators throughout the year and provides any additional support and advice required.

The national final, SciFest@SFI Discover, is organised by the Executive. Teachers and parents of participating students and the regional coordinators are invited to attend. In addition to trophies, awards include participation in international events.

The Executive is responsible for affiliating SciFest to the Intel ISEF each year. The participation of SciFest students in this event is funded by Intel Ireland and the logistics of their participation are organised by Intel who also organise a briefing session for the students at the Intel facility in Leixlip.

6. Strategic Messages and Priorities for SciFest

The analysis carried out as part of the planning process revealed that SciFest has many strengths and opportunities, among them an existing set of strategically important activities and materials for teachers and students, and a supportive set of important allies and stakeholders. It is clear that there is potential for developing the current resources, both in scale and accessibility and this is currently under consideration by the Board's Resources sub-committee.

The analysis also highlighted the need to develop further both existing and new working relationships with key groupings (for example, school management bodies) and the potential opportunities and synergies to be gained by keeping in touch with relevant developments in Europe. SciFest's identity and brand are identified as an important asset, which can be further developed but which must also be protected.

For each of SciFest's three key strategic objectives (KSOs) a number of sub-objectives have been identified. For each of the sub-objectives a desired outcome and a target date for achieving that outcome have been agreed. It is recognised that not all of the sub-objectives are equally important to achieving the project's objectives over the next four years nor do circumstances permit their parallel development. Accordingly, the sub-objectives have, as well as a targeted time frame, also been accorded one of three priority levels.