

Contemporary Social Marketing for Science Communication in an Knowledge Economy

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Starting Point



Today

1. Science and Innovation In Ireland.

2. The Research Approach and Study.

3. The Critical Contribution of
Contemporary Social Marketing to Irish
Science Communication.

4. Conclusions.

Science and Innovation In Ireland – The Background

Ireland's economic future depends critically on the supply of an increasing number of people qualified in science and engineering. But at the very time this demand is increasing, there has been a sharp fall-off in interest in the sciences throughout our education system.

% of LC students taking science

Currently, 14.7% of the cohort study physics and 13.6% study chemistry. (SSTI, 2006)

	1985	1990	1995	2000
Biology	52%	52%	52%	46%
Physics	21%	20%	18%	15%
Chemistry	21%	17%	14%	12%
Ag. Sc.	4%	4%	4%	5%
P&C	4%	4%	3%	2%

Science Decline at 3rd level

- Student recruitment to science, engineering & technology courses is below capacity (in many instances), not enough first preference applicants to match places on offer.
- There is a lowering of points for entry to science courses, with many certificate and diploma courses now offering places to “all qualified applicants”.

The Irish ROSE Survey

What the young people think of Science

- Students do not think in terms of scientific disciplines
- Brand image of science is poor
- an aversion to 'becoming a scientist'.



Strategy for Science, Technology and Innovation '06-'13

- In 2005 the government allocated €658 million to the development of science, technology and innovation, and has earmarked a further €192 million for this initiative until the end of 2008. (SSTI, 2006)
- Create innovative ways of making Ireland more competitive & sustainable on a global scale.
- Continue with the creation of a knowledge-based society with greater public interest in & engagement with science. (SSTI, 2006)

Science Communication

- Fun, interactive
- Emphasis on learning instead of education
- Hands-on, shared learning
- Active rather than passive
- Open-ended discovery
- 'informal' science



Ref: J. Jerry, Science in Society Conference, NUI Galway, 2007

Irish Science Communication

- Relatively new with €50+ million since 2002
- Mainly invested by two key government players, DSE and SFI
- Exploration Station – the Republic's First Interactive Science Centre - Opening early 2010 (Ref: J. Jerry, Science in Society Conference, NUI Galway, 2007)



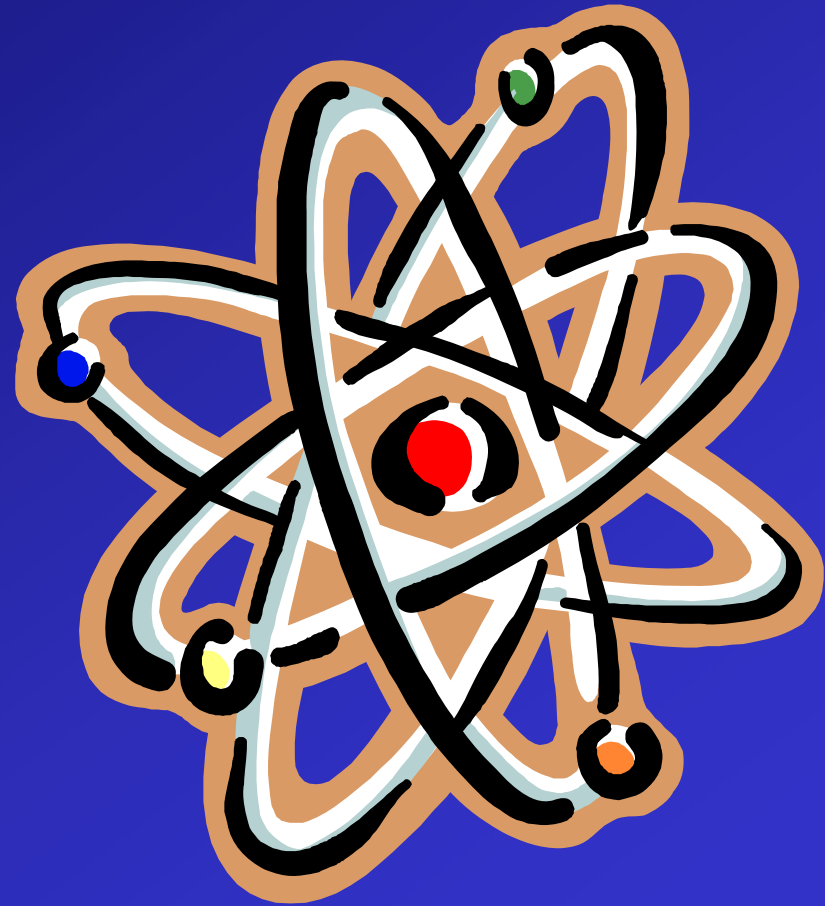
Adults Engage With Science

- To have jobs
- To have a high quality of life
- To be informed voters
- To invent, discover, '*go where no man has gone before*'
- Because their lives depend on it



Children Engage With Science

- To have fun!
- They are curious
- They want to understand things
- They like to take risks
- Because their world depends upon it



WE want the public to engage with science.....

- It matters to us, it's our job,
- To ensure we have a well trained labour force
- To keep multinational corporations in Ireland
- To attract new ones
- Because our society and our quality of life depends upon it

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The Research Question

- What are the challenges and barriers for Social Marketing in Science Communication, Outreach and Public Engagement in a knowledge based society?

Pluralism with Research: Integrating Sources of Knowledge

Literature

Case Studies
2002 onwards

Surveys
2007 onwards

Observations
2005
onwards

In depth
Interviews
2005 onwards

WARNING!



- 67% response rate
- Relevance and rigour
- Contextual caution... yet mapping exercise, in relation to other research, provides insightful window on Irish outreach activities

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Survey Demographics Findings

- Majority urban, Majority established since 1998
- 22% have no full-time staff
- 36% have one or two full-time staff
- On average one part-time staff member
- 10% have 5 volunteers
- Income 100k to €3.8 million
 - Multiple income sources with government/SFI key funders

Description of Outreach Findings

- Outreach aims mainly traditional
- Promoting/stimulating awareness of science
 - 47% Generalized work
 - 30% Broad sectoral issues
- Mainly education orientated, broadly defined
- General public/community - “*to inspire future generations*”

Social Marketing Implications

- Deficit model – traditional 60's science approach, 'we know what is best for you'
- Lack of coordinated/integrated strategy
- Focus on awareness
 - 24% reported 1st aim to increase # of science students
 - 22% reported main aim was to increase positive science attitudes

Pure Behaviour Change

Delivery Mechanisms Findings

- Dominated by
 - science week/festival
 - lectures/open days
 - public talks
 - printed media
 - teacher curriculum
 - one day workshops
 - Primary/ 5/6yr & teachers
 - Secondary/TY/Teachers
 - General public/parents/disadvantaged

Audiences to be Engaged

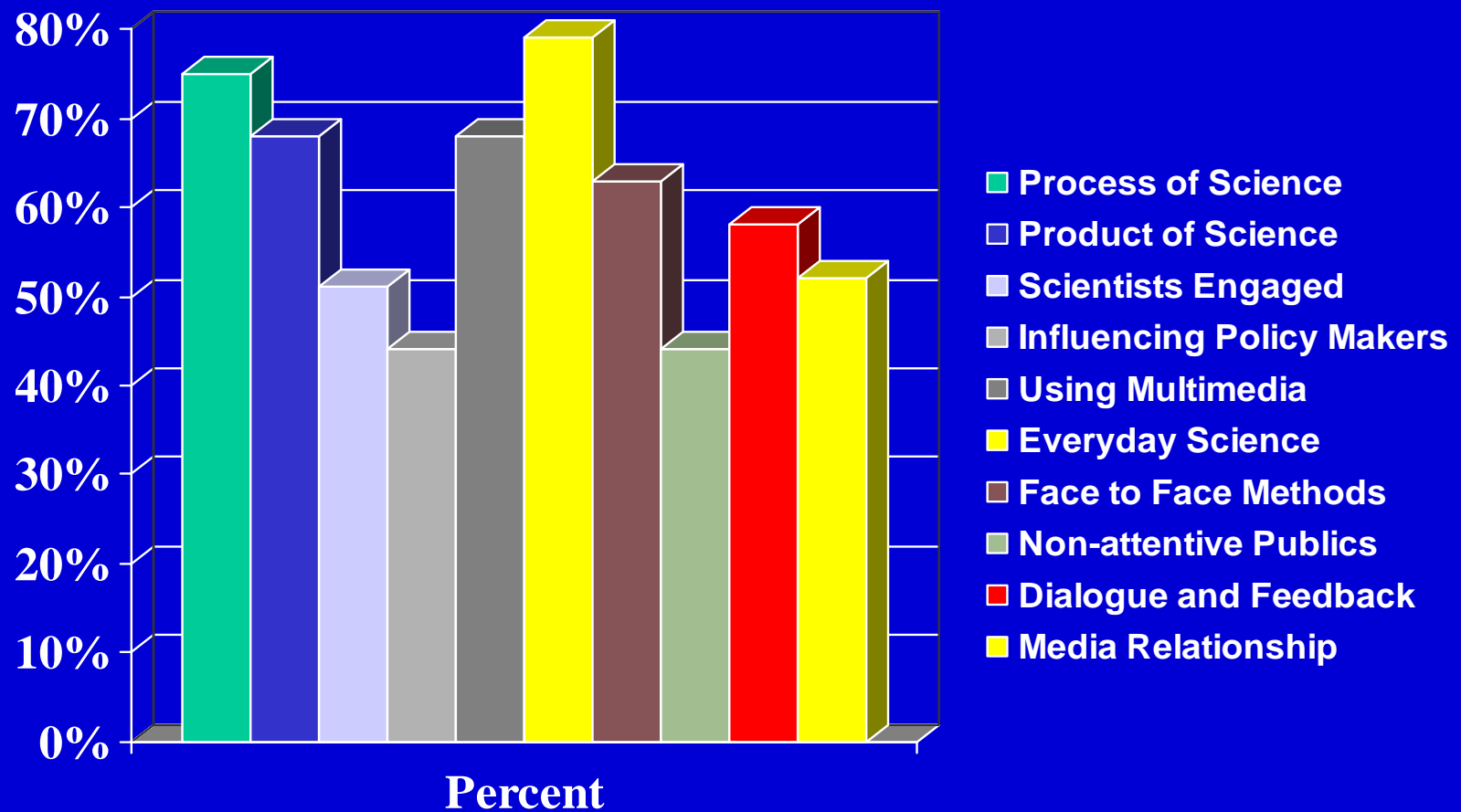
- Children/students
- Teachers
- Person-on-the street
- Researchers
- Politicians
- Philanthropists
- Corporations
- The media
- **In short, everyone!**



Social Marketing Implications

- Deficit model **again**
- Lack of coordinated/integrated strategy
- Focus on awareness, not behavioural change **again**
- **Absence of key *Upstream* stakeholders** - media, cultural groups, policy makers

Hallmarks of Good Practice Findings



Hallmarks of Good Practice Findings

- **Strengths**

- Focus on schools and teachers
- Dedicated outreach champions

- **Weakness**

- No focus on non-attentive science publics
- No comprehensive engagement with scientists

Evaluation Findings

- Very little summative evaluation
 - Change in knowledge 34%
 - Change in beliefs 19%
- Formative evaluation basic
 - Awareness of programmes 58%
 - Audience satisfaction 63%

Social Marketing Implications

- Segmentation downstream but not upstream
- Relationships and partnerships critical
- Non-attentive public a warning sign
- Evidence based and insightful decision making impaired

Barriers Findings

- Resources
- Human resources
- Financial resources
- Socio-cultural context
- Curricular/educational context
- Evaluation
- Time
- Limited use of technology

Challenges Findings

- Strategic focus
- Evaluation
- Sociological and pedagogical analyses
- Policy integration
- Broader stakeholder inclusion
- Leadership

“understanding among science communication policy makers of the issues & the approaches related to different forms of science communication remains low – this results in fragmented efforts, in some cases programmes which are much less effective than they might be”.

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5 Contemporary Social Marketing Challenges for Science in a Knowledge Society

1. 'Pure' behavioural change = mindset
2. Leadership and 'joined-up', strategic co-ordination.
3. Upstream Partnerships
4. Network and Relationship Building
5. Evaluation

For More Information

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