INCOSE

THREE RIVERS CHAPTER

2011 STRATEGIC PLAN

**Approvals:**

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| --- | --- | --- |
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# Introduction

The Three Rivers Chapter (TRC) of the International Council on Systems Engineering (INCOSE) was formed in May 2010 and chartered in June 2010. It draws membership from the western areas of Pennsylvania, particularly the area around Pittsburgh.

## TRC Vision and Mission

The mission of INCOSE is to:

*Share, promote and advance the best of systems engineering from across the globe for the benefit of humanity and the planet*

To achieve the vision of being:

*The world's authority on Systems Engineering.*

The vision and mission of the TRC derives from these. We share the mission of INCOSE, with the intent of achieving the vision of being:

*The region’s authority on Systems Engineering*

## TRC Objectives

Objectives of the TRC, in random order, are:

**Objective 1: To provide a focal point for dissemination of systems engineering knowledge --** The TRC seeks to provide means for the dissemination of SE knowledge to the TRC members, to consumers of SE in government and industry, and to the community at large.

**Objective 2: Promote Development of the TRC –** The TRC seeks continued growth to increase its impact on the SE community of the region.

**Objective 3: To improve the professional status of all persons engaged in the practice of systems engineering --** The TRC seeks to improve the professional status of TRC members through training, education, and support for certification.

**Objective 4: To promote collaboration in systems engineering education and research --** The TRC seeks to promote SE research and education through collaboration with local universities, volunteer support of SE research activities, and volunteer support of SE activities within the community.

# TRC Stakeholders

Primary stakeholders are those who are directly engaged with the TRC, influence its direction, and receive direct benefit from its actions. These primary stakeholders for the TRC are:

1. Individual INCOSE Members within the geographic domain of the TRC
2. The INCOSE international organization
3. Corporate INCOSE Members (CAB Members) within the geographic domain of the TRC

Secondary stakeholders are those who are not directly engaged with the TRC (yet), but who still have some influence on the activities of the TRC, and still receive some benefit from its actions. Secondary stakeholders within the geographic domain of the TRC include:

1. Systems engineers not yet affiliated with INCOSE or the TRC
2. Companies who utilize Systems Engineering, but are not yet affiliated with INCOSE or the TRC
3. Academic institutions who provide technical and engineering education
4. Governmental and civic organizations that can benefit from the expertise of TRC members.
5. Professional societies whose members collaborate with systems engineers

# Strengths, Weaknesses, Opportunities, and Threats

## Strengths

The following is a list of the strengths of the TRC that need to be applied to our opportunities and leveraged against weaknesses and threats:

1. **Location** - The TRC operates in the geographic domain centered on Pittsburgh, PA. Pittsburgh is the hub of corporate, academic, governmental, and civic activities within the western Pennsylvania area.
2. **Corporate Diversity** - A diverse range of corporate organizations operates within the TRC geographical domain. Pittsburgh has made the transition to a knowledge-based economy, while retaining elements of its earlier heavy industrial economy. As a result, the region hosts industries ranging from basic metals manufacturing to information technology; from coal mining to advanced healthcare. SE has a role to play in all of these industries. The diversity of organizations brings a broader, more comprehensive, perspective to chapter and SE activities
3. **Academic Resources** - The TRC geographic domain includes numerous world-class technical universities (e.g., Carnegie Mellon University, Duquesne University, Penn State University, Robert Morris University, University of Pittsburgh), colleges, community colleges, and technical schools. All of these create both sources of SE knowledge, and demands for SE expertise. The TRC has strong ties with some of these institutions
4. **Member Enthusiasm** – A forum for SE knowledge sharing and networking has long been absent in the region. The formation of the TRC addresses that unmet need, and has resulted in rapid growth of the chapter and enthusiastic engagement of the members.
5. **Strong Sponsorship** – The TRC receives sponsorship and support from several corporate and academic organizations within its geographic domain. This support enables the TRC to provide valuable products and services to its members.

## Weaknesses

The identifiable weaknesses of the TRC that need to be addressed and mitigated are:

1. **Low penetration** - Low representation/membership relative to the large number of systems engineering people and organizations in the local area.
2. **Lack of Awareness** - The unawareness of local organizations and potential members of the INCOSE and the TRC and INCOSE or incomplete understanding of the benefits of belonging to INCOSE
3. **Lack of Experience** – As a newly formed chapter, the TRC has little experience with operating an INCOSE chapter, and has few precedents to use for guidance.
4. **Lack of Depth** – As a newly formed chapter, the TRC has not yet developed an extensive network of contacts and relationships within the geographic domain. Additionally, as a small chapter, the TRC has not yet developed sufficient redundancy in the roles assumed by the members to support the chapter. This results in a lack of depth in the resources and skills needed to support the chapter.

## Opportunities

Opportunities for the TRC are extensive. As SE gains both definition and acceptance in the technical community, and as INCOSE gains recognition, we are at the brink of a new wave of systems engineering applications that must provide cost-effective approaches for systems development. Our specific opportunities are:

1. **TRC Growth** - Continued expansion and retention of our membership (both people and organizations).
2. **SE Nexus** - Create a focused systems engineering organization for systems engineers and systems engineering activities in the local area.
3. **TRC Recognition** - Recognition as the organization to contact for virtually any aspect of systems engineering.
4. **SE Promotion** - Furthering the use of systems engineering in the all relevant corporate, academic, governmental, and civic arenas.
5. **SE Education** - Improving our stakeholders’ understanding of the new technologies (e.g., information technology) and the application of systems engineering practices to these rapidly changing engineering applications.
6. **TRC Collaboration** - Increased joint meetings with other regional organizations in related fields (e.g., IEEE, PMI, Pittsburgh Technical Council)

## Threats

The threats to the TRC that need to be understood and minimized are:

1. **Competition** - Other organizations (e.g., IEEE, PMI) overshadowing our chapter in the systems engineering discipline.
2. **Complacency** - Loss of enthusiasm of the TRC members if they are not challenged and afforded opportunities for active involvement in systems engineering and chapter initiatives.
3. **Loss of Focus** – With numerous opportunities and limited resources (e.g., time, money, and people), the TRC could fail to maintain focus on executable plans and actions.

# Strategic Issues

The strategic issues facing the TRC are:

1. **Growth** - How shall we expand our membership to assure that we have the current level of local representation necessary to capture our local systems-engineering community's knowledge and needs?
2. **SE Promotion** - How do we provide an environment that promotes expansion of our members' use and knowledge of systems engineering principles and their continued enthusiasm for the chapter and its working groups?
3. **TRC Recognition** - How do we establish the TRC as a world-class systems engineering INCOSE Chapter?

# Strategies

The TRC’s general strategy for meeting our objectives is to

1. Define the objective
2. Assign primary responsibility for pursuit of the objective
3. Create a team to execute the pursuit
4. Empower the team with the needed resources
5. Monitor the progress of the team

Teams will consist of both officers and members at large. Teams will be organized through well-defined officer responsibilities and a comprehensive operating plan based on our Strategic Plan. Teams will then focus on satisfying objectives and meeting stakeholder expectations and needs.

The TRC will pursue its objectives through the strategies discussed in this section. Strategies are grouped by the objectives that they seek to attain.

## Disseminating SE knowledge

**Objective 1: To provide a focal point for dissemination of systems engineering knowledge --** The TRC seeks to provide means for the dissemination of SE knowledge to the TRC members, to consumers of SE in government and industry, and to the community at large.

In support of Objective 1, the TRC will promote the dissemination of SE knowledge through one or more of the following methods:

1. **Providing technical presentations, workshops, and panel discussions on SE topics.** The TRC will host monthly meetings to facilitate this dissemination. Meetings will be open to chapter members and non-members alike. Presentations will also be
2. **Authoring and publishing papers on SE.** The TRC will encourage chapter members to author papers addressing SE topics. Such papers will be submitted for publication in the Journal of Systems Engineering, Insight, and other technical journals. The TRC will also encourage collaboration among chapter members in the authoring of papers
3. **Collaborating with other professional societies in the region.** The TRC will collaborate with other professional societies (e.g., PMI, SAE, AIAA, and Pittsburgh Technology Council) active in the area to share knowledge and promote the field of SE.
4. **Provide resources to support SE.** The TRC will provide resources (e.g., library of SE information, references to other information repositories) to support SE activities of chapter members and other systems engineers.
5. Promote participation in INCOSE Working Groups. The TRC will ensure that members are aware of INCOSE working groups, and encourage their participation as a means of gathering and disseminating SE knowledge.

Criteria for success in 2011

1. 11 meetings held featuring technical presentations, workshops or panel discussions
2. 3 papers submitted by TRC members to JSE, Insight, or other technical journals
3. 1 collaboration established with another professional society in the area.
4. Establishment of a library area on the TRC public and internal web sites to disseminate useful SE information

## TRC Development

**Objective 2: Promote Development of the TRC –** The TRC seeks continued growth to increase its impact on the SE community of the region.

The TRC seeks continued growth to increase its impact on the SE community of the region. Increased membership increases the scope of our knowledge dissemination, an opens additional opportunities for collaboration in SE research and education.

Growth is achieved by offering products and services of high value, and by ensuring awareness of those products and services across the targeted population. Thus the chapter must operate efficiently and effectively, and it must also reach out to potential consumers of its products to develop awareness.

Growth will be achieved by five initiatives

1. **Retain current membership:** Ensure that current TRC members are reminded of membership renewal. Assure member satisfaction by periodically polling the membership to identify expectations of the TRC, and then striving to meet those expectations
2. **Achieve Excellent Chapter Administration:** Ensure the ability of the TRC to serve the needs of its stakeholders by establishing plans and processes to guide TRC operations. These plans and processes ensure continuity of operation as officers and committee chairs change annually.
3. **Outreach to INCOSE members:** As a new Chapter, the TRC is not known to all of the INCOSE members within its geographic domain. Through a consistent and dedicated outreach to these INCOSE members, we can inform them of the existence and activities of the TRC and encourage their affiliation and participation.
4. **Outreach to local companies:** Many industries and companies are present within the geographic domain of the TRC. Not all are familiar with and engaged with INCOSE. We can reach out to these companies, informing them of the value of SE, and the mission and activities of INCOSE and the TRC. We can invite them to join INCOSE and engage with the TRC, as well as encourage their employees to do the same.
5. **Outreach to local university/colleges:** Invite faculty and students to participate in TRC meetings. Use this as an opportunity to promote both INCOSE membership, and the formation of a student chapter

Criteria for success in 2011

1. TRC Strategic, Operational, Programs, Communications, and Membership plans are developed, reviewed, and approved.
2. All INCOSE members in the TRC geographic domain not currently affiliated with the TRC are contacted by mail or email quarterly
3. 90% member retention
4. One or more articles submitted to local media for promotion of TRC
5. TRC contact >4 companies/universities not currently affiliated with the TRC
6. TRC membership reached 75

## Improve professional status

**Objective 3: To improve the professional status of all persons engaged in the practice of systems engineering --** The TRC seeks to improve the professional status of TRC members through training, education, and support for certification.

The TRC seeks to improve the professional status of TRC members and all those engaged in systems engineering. This improvement is to be attained through training, education, and support for certification.

The TRC will encourage members to seek systems engineering certification (i.e., ASEP, CSEP, ESEP), and aid them in doing so by supporting study groups, workshops, and seminars addressing the critical elements of SE certification.

The TRC will also promote the concept of SE certification to companies within the geographic domain of the TRC. This promotion will seek to familiarize the companies with the benefits of certification and provide assistance in incorporating certification into their organizations.

Criteria for success in 2011

1. TRC established a study group for ASEP/CSEP/ESEP
2. TRC discussed SE certification with ≥2 companies

## Promote collaboration in SE education and research

**Objective 4: To promote collaboration in systems engineering education and research --** The TRC seeks to promote SE research and education through collaboration with local universities, volunteer support of SE research activities, and volunteer support of SE activities within the community.

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The TRC will reach out to local universities, colleges, and community colleges to familiarize them with INCOSE, the TRC, and resources available from both. The goal of this outreach will be to promote SE education within these institutions, and develop interest in SE among the student population, eventually leading to the incorporation of INCOSE student chapters.

The TRC will collaborate with academic institutions, corporate entities, and other professional societies to promote and perform SE research. Specifically the TRC will sponsor the INCOSE SE Effectiveness Working Group in its collaborative work with the NDIA and IEEE to create a stronger business case for SE.

The TRC will support local community activities through the donation of the expertise of its members in addressing worthwhile community goals.

Criteria for success in 2011

1. The TRC sponsored the SE Effectiveness Working Group
2. The TRC contacted 2 or more universities to discuss engagement with INCOSE (e.g., student attendance at chapter meetings, faculty attendance at chapter meetings, establishment of a student chapter)

# Plan

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| **Objective** | **Action** | **Responsibility** |
| 1.a | Schedule presentations at least 3 months in advance of meetings | Programs Chair |
| Assure availability of a “back-up” presentation in the event of speaker cancellation | Programs Chair |
| Publicize presentations on TRC web site and in local media | Communications Chair |
| 1.b | Provide encouragement for TRC members to author or co-author conference papers. Announce calls for papers and deadlines at TRC meetings | President |
| 1.c | Establish collaboration with PMI (e.g., speak at PMI meeting, PMI speaker at TRC meeting, joint meeting) | Programs Chair |
| Establish collaboration with Pittsburgh Technology Council (e.g., publish interview or article, meeting announcements) | President-elect |
| 2.a. | Conduct survey or member interests annually | President |
| Execute process to remind members of membership renewal | Membership Chair |
| 2.b | Develop a Strategic Plan | President |
| Develop an Operations Plan | President |
| Develop a Programs Plan | Programs Chair |
| Develop a Communications Plan | Communications Chair |
| Develop a Membership Plan | Membership Chair |
| 2.c | Send quarterly email invitations to all INCOSE members in area who are not affiliated with TRC | Membership Chair |
| Send meeting announcement to ALL INCOSE members in the area | Communications Chair |
| 2.d | Send TRC introductory presentation to area companies who are not yet affiliated with TRC. Follow up with telephone calls | Membership Chair |
| Visit receptive companies | President  Membership Chair |
| 2.e | Identify faculty contacts at local universities and issue invitations to faculty and students | Membership Chair |
| 3 | Arrange presentation on SE Certification for one of the TRC meetings | Programs Chair |
| Encourage members to pursue certification at all TRC meetings | President |
| Arrange a study group for SE certification candidates | President-elect |
| Arrange meetings with 2 or more companies in the TRC geographic domain to discuss a certification program | President-elect |
| 4 | Contact faculty at local universities to increase awareness of TRC and INCOSE | President-elect |
| Sponsor / support the SE Effectiveness Working Group | SEEWG initiative lead |

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