

Use of Integrated Planning Tools for Revitalization: SMARTe (U.S.) and START-UP Plan (Germany)

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ABSTRACT: (150 words)

In 2001, the US-German Bilateral Working Group (BWG) identified more than 40 obstacles to site revitalization which occurred in both countries. From 2001-2005, the BWG developed tools and techniques for overcoming these obstacles. Five joint workshops were held on the following revitalization topics: economic tools; environmental risk assessment and communication tools; project management and marketing tools; social aspects of revitalization; and sustainable reuse.

Information from these workshops, in addition to information collected from "model" projects, was used to develop SMARTe (U.S.) and the START-UP Plan (Germany). Sustainable Management Approaches and Revitalization Tools – electronic (SMARTe) is a web-based, decision support tool that helps communities and other revitalization stakeholders select revitalization options. The START-UP Plan was developed to assist redevelopment stakeholders in preparing a target-group specific, integrated project and business plan. Currently, both products are being applied at different sites/areas within the U.S. and Germany in order to test their usefulness and usability.

Introduction

Since 1990, the United States Environmental Protection Agency (USEPA) and the German Federal Ministry for Education and Research (BMBF) have worked bilaterally to identify, understand and apply innovative technologies and policies for remediation and sustainable revitalization of contaminated sites in each country.

In 2000, the U.S.-German Bilateral Working Group (BWG) embarked on Phase 3 with a focus on providing tools and techniques for facilitating revitalization of potentially contaminated sites. The Interstate Technology and Regulatory Council (ITRC) in the U.S. joined the BWG at this time. By 2001, the BWG had identified more than 40 obstacles to revitalization which occurred in both countries. From 2001-2005 (Phase 3), the BWG worked to develop tools and techniques for overcoming these obstacles.

The BWG selected "model projects" (projects which were characterized as having success in at least one area of revitalization) in each country. There were 13 projects selected in the U.S. and 10

projects selected in Germany. (Additional information on the model projects is available at: <http://smarte.org/smart/resource/sn-model-projects.xml?page=1>.) The BWG requested that Model Project representatives participate in five joint workshops (and two final conferences) on the following revitalization topics: economic tools; environmental risk assessment and communication tools; project management and marketing tools; social aspects of revitalization; and sustainable reuse. Information collected from the Model Projects and the Model Project representatives was used to develop the two primary Phase 3 products.

Sustainable Management Approaches and Revitalization Tools – electronic (SMARTe) is a web-based, decision analysis tool, developed in the U.S. to aid communities and other revitalization stakeholders in evaluating options for site revitalization. In Germany, the START-UP Plan was developed to assist redevelopment stakeholders in preparing a target-group specific, integrated project and business plan. The two products complement each other in that information from both Germany and the U.S. are contained in both. Currently, both products are being applied at different sites/areas within the U.S. and Germany in order to test their usefulness and usability.

The following sections will give an overview of SMARTe and the START-UP Plan and share case study information regarding the use of these products in the U.S. and Germany respectively.

SMARTe

Purpose / Description

SMARTe (at smarte.org, see Figure 1) is a web-based decision analysis tool that provides information, tools, and decision analysis to support revitalization and the evaluation of future reuse scenarios of a potentially contaminated site. In general, SMARTe integrates the following key elements: visioning (future land use); stakeholder involvement (including communities); economic viability (financing, market costs and benefits); environmental issues (site assessment, risk assessment and risk management); liability; and community benefits. It currently contains information, links, best practices and electronic analysis tools that can help stakeholders work through the revitalization process. In October 2007, SMARTe will have full decision analysis capability so that the interests and needs of different stakeholder groups can be considered. SMARTe will use multi-criteria decision analysis to allow a diverse group of stakeholders to compare different reuse options and reach agreement regarding the reuse of a site/area.

SMARTe provides an interactive technical guidance program with analysis capabilities developed solely with open-source software employing World Wide Web Consortium (WC3) standards. The open-source philosophy is aimed at sharing information at all levels, gathering and responding to feedback for continuous improvement, and encouraging users to supply functionality and content. For SMARTe, this consists of sharing content and all resources, operating a continuous feedback option, and encouraging users to submit case studies that can be shared with the SMARTe community of users.

<Figure 1 goes near here>

Development Team

SMARTe is being cooperatively developed by the U.S. EPA's Office of Research and Development and Office of Brownfields Cleanup and Redevelopment, the German BMBF, ITRC, and other experts including those from universities, local governments, lawyers, developers, community groups, private consultants and regulators. All users are invited to give continuous feedback (using the feedback buttons around the site) and are therefore also considered part of the development team.

Development Approach

SMARTe development occurs in a phased approach in which SMARTe components (see Figure 2) are built with each phase of development. The phases of development start, for each component of SMARTe, with relatively simple textual information and access to databases, followed by stand-alone analysis tools that support each component of

SMARTe, and then completed by integrating all components using a multi-criteria decision analysis engine.

Feedback from the user community and new information received through workshops, the open literature, participation in national and international conferences, experts, and review comments are incorporated into SMARTe on an annual basis. SMARTe also is peer reviewed and reviewed by quality assurance personnel on an annual basis.

<Figure 2 goes near here>

SMARTe 2007

SMARTe 2007 is currently available at smarte.org. SMARTe 2007 includes a variety of tools as well as basic functional components of SMARTe (for example, search functions and feedback capability). Information, links and additional resources are currently provided in SMARTe 2007 for the following topics and subtopics:

- Getting Started (revitalization plan strategy, project stakeholders, timeline of events, case studies, previous site use examples, environmental stigma)
- Site Description
- Future Land Use (vision, previous plans, revitalization motivation, regional and local needs, marketing the project benefits, sustainable practices, keys to success, innovative project features, construction/demolition)
- Community Involvement (description and demographics, communication)
- Environmental Management/Site Assessment (EPA Brownfields Road Map, infrastructure considerations, all appropriate inquiry, environmental schedule)
- Environmental Management/Risk Assessment (public health, EPA's Integrated Risk Information System (IRIS), EPA's Exposure Factors Handbook, National Exposure Research Lab)
- Environmental Management /Risk Management (risk-based corrective action, remediation/cleanup, long-term stewardship)
- Liability (liability risk concerns, regulatory liability, third party liability, environmental insurance)
- Financial Analysis (financial management and controls, market analysis, economic risk analysis, estimating economic viability, lender issues, investor issues, key financial indicators, information and advisory services, long term economic impacts)
- Sources of Money (public financing, private financing, foundation funding)
- Project Schedule
- Other (model projects, internet links, bibliography, glossary, acronyms, quality assurance, US-German Workshops)

Additionally, the following checklists are available:

- Land reuse options

- Select a consultant
- Select a lawyer
- Purchasing a brownfield property
- Finding an insurance broker
- Selecting a developer
- Understanding units of measurement
- Writing a request for proposals for environmental site assessment or cleanup

Finally, the following analysis tools are available:

- Public participation
- Potential stakeholders
- Net revenue calculator
- Financing resources
- Human health risk calculator (early stages of development)
- Site characterization
- Monitoring data analysis

SMARTe is scheduled to be updated annually to make revisions and improvements to the site based on user feedback. The complete decision support capabilities will be available in SMARTe 2008 (scheduled for release October of 2007).

Outreach

A tutorial icon on the web-site provides users with navigational instructions for SMARTe; however, to raise the awareness of SMARTe's existence, it is presented and demonstrated at national and international conferences, workshops, and training sessions periodically throughout the year. It is important to note that since SMARTe was developed using open source software, the code is freely and completely accessible for other countries to adapt for their use. Based on web-site statistics, 57 countries have accessed SMARTe to date. EPA does request that other countries who find the code useful provide this information to us (either through the feedback buttons or direct contact). It is very important to EPA to receive constructive feedback regarding the usefulness of the site. Additionally, it is particularly useful for EPA to receive information regarding any impacts SMARTe has on a specific project.

Feedback

Feedback can be entered by any user at any location on the SMARTe web-site. Users simply click on a feedback button and enter their comment. The comment is placed into the feedback database which is accessible by the members of the SMARTe Technical Development Team (STDT). As team members review and respond to comments, non-anonymous users (i.e., those who set up a user account) will receive email messages documenting progress. If the user suggests changes and the STDT accepts these suggestions, the changes are first made to a non-public site, and then appear on smarte.org after they have been peer reviewed and reviewed by a quality assurance professional.

Testing – Beta Test Sites

The tools and resources within SMARTe continue to be tested and expanded for the broadest possible application. SMARTe testing occurs via "beta test sites." Beta Test Sites are U.S. brownfield/site revitalization projects that are in the beginning stages of site redevelopment or that have encountered an obstacle preventing the project from moving forward. EPA identified several potential sites that would be willing to use SMARTe to determine whether or not it was useful in getting them started and/or in overcoming any obstacles encountered. Beta test sites provide direct and practical feedback on the usefulness and usability of SMARTe along with providing input regarding future tools. EPA currently has four active beta test sites: Stella, Missouri (MO); Tremé, Louisiana (LA); Rittman, Ohio (OH); and Scottsbluff, Nebraska (NE). Each beta test site works with two SMARTe liaisons: (1) an EPA employee and (2) a Technical Assistance to Brownfields (TAB) Coordinator (grant given by EPA). Three of the beta test sites are just beginning to provide SMARTe feedback; however, the residents of Stella, MO have been providing feedback since the spring of 2005.

Stella, MO

Stella, MO became a beta test site in December 2005. Stella is a small, rural community in southwest Missouri. The current population is 178. However, in former years, a small Hospital (Cardwell Memorial) drew many people to the area to live and work in Stella. Many doctors received their education at this hospital and the hospital served people in two counties. The Cardwell Hospital closed in the 1980s and the site began to deteriorate. In October 2004, Stella residents approached EPA's Region 7 staff concerning the abandoned hospital site. Residents were concerned that the dilapidated building posed a safety hazard, primarily due to the proclivity of children to play inside of the building. In February 2005, EPA Region 7 received a petition signed by over 700 individuals who lived in and around Stella, requesting that EPA help cleanup the former Cardwell Hospital site. EPA Region 7 conducted a sampling investigation in May 2005 at the former hospital site and attended an initial community meeting to discuss the status of site. In August 2005, EPA Region 7 decided that the site was eligible under CERCLA to conduct removal action (i.e., it was declared a superfund site) primarily due to asbestos contamination.

In September 2005, EPA Region 7 requested assistance from Kansas State University (KSU) to help with reuse planning. A KSU professor and Technical Assistance to Brownfields (TAB) Coordinator travelled to Stella to see the site and meet with the core revitalization committee. KSU Landscape Architecture students worked with the town of Stella from November 2005 to April 2006 to develop a plan for the reuse of the Cardwell Hospital site. During this process, EPA Region 7 and the KSU TAB Coordinator suggested to EPA's Office of Research and Development (ORD) that Stella would be a good SMARTe beta test site. The application was completed and Stella became the first SMARTe beta test site in December 2005. In January 2006, EPA ORD representatives travelled to Stella to meet with the core revitalization

committee and to demonstrate SMARTe. EPA began monthly conference calls with the Stella core committee in March 2006 to obtain SMARTe feedback. EPA Region 7 began demolition [Fig. 3] of the Cardwell Memorial Hospital on July 5, 2006 (delays occurred due to Hurricane Katrina). The site was deemed ready for reuse in August 2006.

<Figure 3 goes near here>

Stella residents have provided several important pieces of SMARTe feedback since becoming a beta test site. The main obstacle Stella faced was finding funding for revitalization. SMARTe has helped Stella community members:

- Become educated regarding where to start and what questions to ask
- Identify social, environmental, and economic issues to be aware of/keep in mind
- Find ideas for financial resources for site characterization and revitalization
- Obtain information related to preserving cultural heritage

Additionally, Stella residents have provided suggestions for improving SMARTe such as including additional information regarding:

- Building a gas station - guidelines, permits, restrictions.
- Funding for ball parks and playgrounds and any guidelines, restrictions, etc.
- Creating a health clinic - guidelines, restrictions, funding
- Creating a chemical-free golf course
- Real estate issues, for example, titles and deeds and how to find information related to land ownership
- How to create a storm shelter

EPA will continue to work with Stella residents through at least December 2007.

Future Activities

Future activities include on-going beta testing, continuous user feedback, and annual updates to add tools and address comments. Future versions of SMARTe will expand from a site-specific approach to a regional approach including additional information regarding: regional and local land use planning; sustainable reuse; project management; and brownscapes design.

By combining access to information and data with environmental risk, community benefits, and economic analysis tools, SMARTe will enhance the decision making process and help stakeholders develop revitalization plans that can become marketing tools for their site. By providing potential solutions for sites where many obstacles and few benefits are perceived (that is, facilitating the reuse of contaminated sites), SMARTe will promote successful, long-term site revitalization.

START-UP Plan

Purpose / Description

The START-UP-Guidance was developed on the German side by the START-UP Project Group consisting of representatives of consultancies, universities and research institutes. The START-UP-Guidance supports the parties involved in brownfields projects in the preparation of development concepts. It describes the interplay between the planning, economic, social and ecological aspects of brownfields revitalization. Based on the START-UP Guidance a START-UP-Plan that is a target-group specific, integrated project and business plan tailored to a specific brownfield can be developed. START-UP-Guidance and START-UP-Plan are addressed to property owners, investors and banks, real estate developers, politicians, residents and other affected parties, municipalities, public authorities, organizations, the scientific community, professionals in the field, and those required to carry out clean-ups.

START-UP Guidance

The purpose of this short but comprehensive guidance document is to encourage site-owners, and investors but also municipal decision-makers to redevelop brownfields and to provide a helping-hand through the labyrinth of information, interests and risks, be they real or assumed (Barczewski, et.al., 2005; Ferber, et.al., 2005). In particular, the START-UP Guidance focuses on:

- Identification of the major stakeholders whose contribution is needed for successful Brownfield planning and redevelopment.
- Development, design, and presentation of a project vision,
- Cooperation and effective communication among redevelopment stakeholders of Brownfield project developments.
- Links between the most crucial elements of brownfield redevelopment, covering topics such as:
 - Environmental conditions, examples and approaches for contaminated site identification and cleanup.
 - Economical considerations for projects, including how to raise funds, gain support, and finance a Brownfield Project.
 - Social concerns involved during the planning and development process, including community planning, land reuse issues, and community revitalization groups.
 - Profiles of Best Practice Examples that can be adapted and used for future redevelopment sites.

Additionally, the START-UP-Guidance contains best practice examples of brownfield redevelopment projects:

- The inner harbour of the City of Duisburg,
- The „Heiterblick barracks“, City of Leipzig,
- The “Burbacher Huette”, today known as “Saarterrassen”,
- An industrial estate in the city of Lennestadt,
- The former „Okal“-site, City of Titisee-Neustadt.

The ultimate goal of the START-UP- Guidance is to enable the reader to compose START-UP Plans

(site-specific brownfield redevelopment business plans).

START-UP Plan

The START-UP-Plan focuses on information deemed critical for the respective stakeholders (urban planners, real estate experts, banking experts, residents, etc.). It organizes unstructured information, which may be available in databases, or as concepts or professional assessments and draws attention to the key topics necessary for information transfer and communication between involved parties, project planning and securing project funding. The aim of a START-UP-Plan is to obtain a scheme that describes the economic, environmental, and social risks and opportunities of the planned project comprehensively and thereby to enable and support an evaluation of the developed concept (Fig. 4). **<Figure 4 goes near here>** The description should be written in such a manner and in such detail as to permit all stakeholders to understand and evaluate the content of the plan. In consequence it has to:

- be brief,
- be understandable at a glance,
- promote an integrated view of the overall costs and benefits,
- promote the thoughtful selection of issues which are important in a particular project,
- list frequently asked questions of stakeholders,
- describe innovative ideas,
- describe lessons learned,
- give hints and ideas for teaming and tasking,
- outline development steps and suggest sequential orders for them,
- list references,
- help to best present information,
- give information regarding key elements of project plans,
- emphasize budgeting (completeness and smart estimates) and budget controls.

The following steps for the development of a START-UP-Plan are recommended:

- Analysis of the key features of the project idea,
- Recognition of the need for integrated presentation of the project idea,
- Determination of the audience, who is of key importance for the project,
- Identification of the key information to be given to the audience,
- Focus on key information in which the audience is interested,
- Identification of the procedure to collect the information,
- Design of the plan by thinking about how best to present the information.

Pilot-Testing the START-UP Plan

Current research showed that many guidelines pertaining to the management of brownfields were lacking in the terms of practical applicability and, hence, were rarely used (Schrenk, 2004, Samtleben and Schrenk, 2007). As a direct consequence, the START-UP Guidance was put through a four stage test.

Phase 1: Design of a questionnaire, selection of test sites

Phase 2: Drawing up the START-UP Plans based on the START-UP Guidance

Phase 3: Analysis of the questionnaires, Workshops to discuss the START-UP Plans, Interviews with consultants

Phase 4: Implementation of the outcome in the START-UP Guidance.

Since people tend to be "blind" to their own shortcomings, the test was not conducted by members of the research group but through external consultants who had no a priori knowledge of the START-UP guidance. The test was partially subsidized by the BMBF (Federal Ministry of Education and Research) and site owners could apply and suggest a consultant to draw up the actual START-UP Plan. One requirement to receive the subsidy was that the consultants had to actively report shortcomings and attend workshops after completion of the START-UP Plan to ensure that possible drawbacks of the guidance were recognized and mended.

The Pilot Sites

The former textile plant Lautex

is located in the state of Saxony in former East-Germany. The site extends over 10,620 m², 3,510 m² of which are covered with buildings. Currently, some of the buildings are used as garage or for storage (Fig. 5). The site was bought by the city of Dürrehennersdorf in order to revitalize it. There is some contamination in the subsurface, but according to state legislators, there is no active remediation necessary at the moment.

The new owners have no distinct plan as to the future use and the START-UP Plan was developed to make recommendations regarding economically feasible management and revitalization options. **<Figure 5 goes near here>**

The former railroad yard Stuttgart

extends over an area of approx. 22 ha and is a prime location in the city of Stuttgart, one of the most industrialized regions of Germany (Fig. 6). It is located next to the mineral springs and public pools, the fair-ground, the Gottlieb-Daimler-Stadium, Carl Benz Center, Porsche Arena, Daimler Chrysler Museum and the old city center of Bad Cannstadt. After the Deutsche Bahn closed the yard, the buildings were rented to different tenants such as trucking companies and scrap metal merchants. By 2004, some 20 renters with 57 different businesses were present on the site. The START-UP Plan was implemented for a part of the site. It was developed to take into consideration the needs of the city of Bad Cannstadt (residential areas, small businesses) as well as the new owner (City of Stuttgart) and the various renters. **<Figure 6 goes near here>**

The Hart van Zuid site, Hengelo, Netherlands

extends over approx. 50 ha. It is a historic site (old steel industry) and is located between the railroad station and the "Twente Kanal" (Fig. 7). Currently, some of the area is used by the metal and electronics industry, but most of it is not in active use. The goal of the START-UP Plan was to

find a concept to revitalize the area in an “upper-class” residential living and working area. Furthermore there are possibilities that museums and the branch of a university could be relocated in the area. <Figure 7 goes near here>

Current Status

The START-UP Plans have been drawn up and presented to the site owners as well as the START-UP Project Group. Generally, the owners were very happy with the outcome and the ideas they obtained regarding their sites. One of the START-UP Plans' main features is their compactness. Within approximately 10 pages, the owner gets a pretty good first idea on how to proceed with the property.

One main focus when offering the START-UP Plans was that the sites were to represent different geographic, demographic and economic locations. While the Stuttgart site, for example, is located in a demographically gaining and economically booming area, the Lautex site is the exact opposite. Nevertheless, the START-UP Plans were usable to draw up possible management options for the different locations.

In late 2006, the questionnaires and the outcome of the workshop were evaluated and incorporated into the START-UP Guidance. Hence, currently the new and improved “Start-Up Guidance 2007” is available for use to consultants, site owners, cities, etc.

Conclusions

Sustainable development of urban regions is a high priority in Germany and the United States. Nowhere is this better reflected than in the ambitious policies to restore derelict and contaminated properties. As Germany and the U.S. work to sustainably redevelop contaminated properties, they are turning with greater regularity to the other to collaborate on the development and application of innovative tools and programs. This has clearly been the experience in the creation and testing of SMARTe and START-UP. Consensus has already emerged proving the benefits gained through these unique and powerful decision tools. SMARTe and START-UP are uncomplicated in their concept, powerful in their applications, public in their access, and proven in their results.

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Relevant web sites

- U.S.-German Bilateral Working Group: www.bilateral-wg.org
- SMARTe: www.smarte.org
- START-UP Plan: www.vegasinfo.de/startup/

Figures

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4	Information Pyramid for START-UP Plan
5	Textile Plant Lautex, Saxony
6	Former Railroad Yard, Stuttgart
7	Hart van Zuid Site, Hengelo, Netherlands

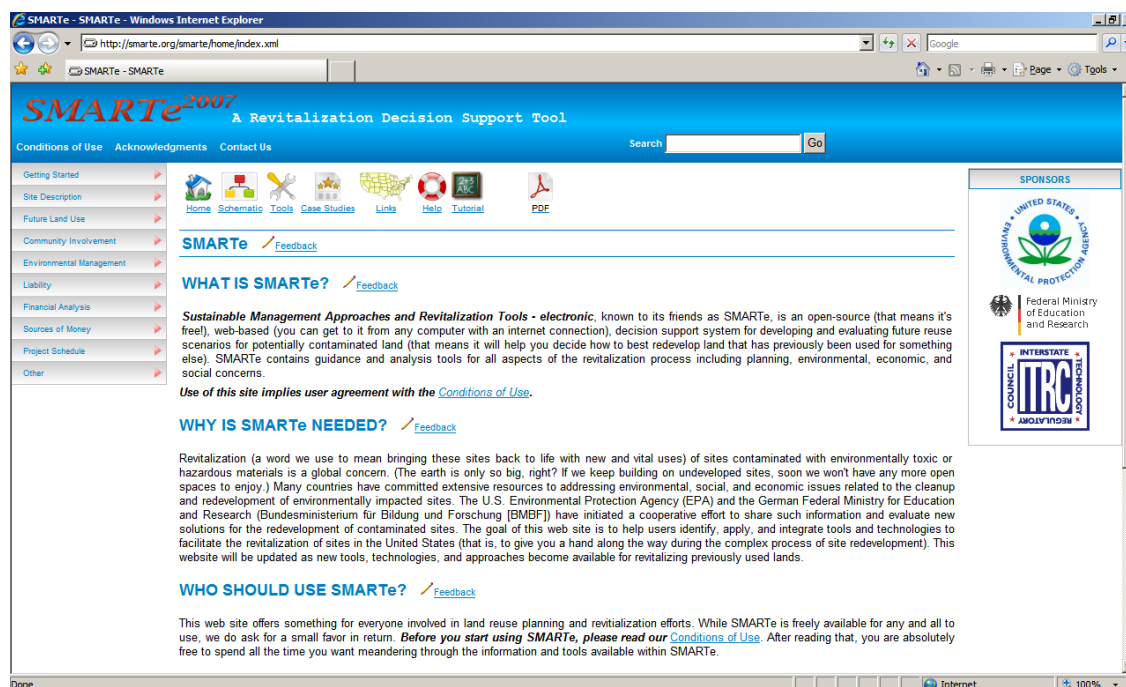


Figure 1: SMARTe Home Page

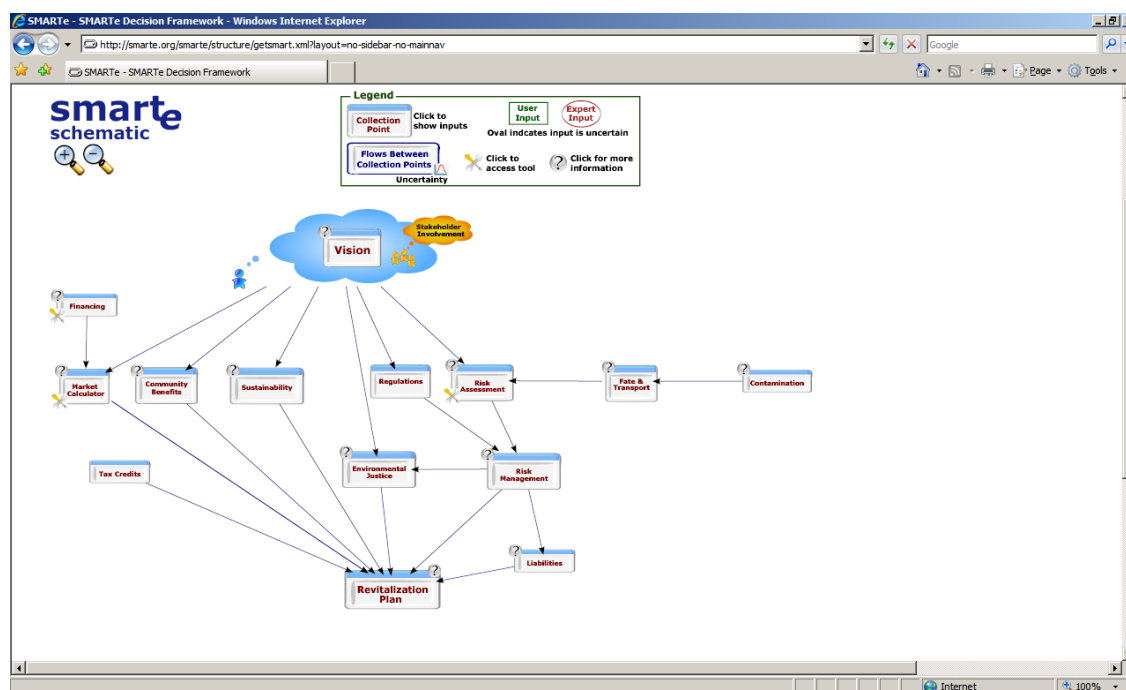


Figure 2: SMARTe Schematic



Figure 3: Cardwell Memorial Hospital Demolition, Stella, Missouri

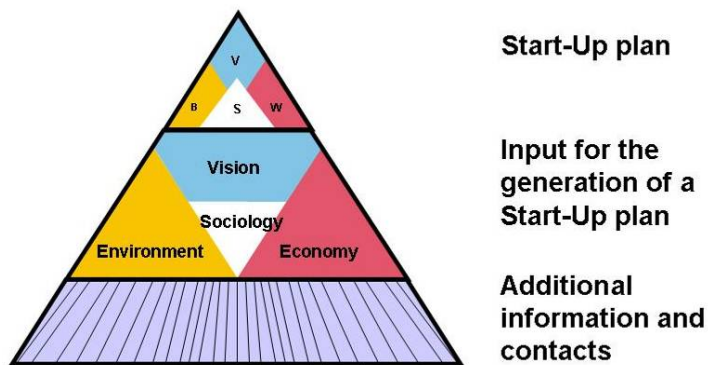


Figure 4: Information Pyramid for START-UP Plan



Figure 5: Textile Plant Lautex, Saxony



Figure 6: Former Railroad Yard, Stuttgart

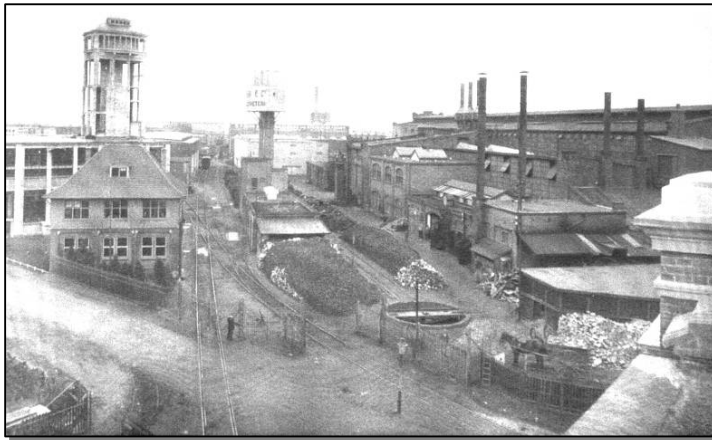


Figure 7: Hart van Zuid Site, Hengelo, Netherlands