Project “Let's Do it 2008”

Location: Estonia
10 000 tons of garbage
On 3rd of May.
with 50 000 volunteers.
It was possible!
To clean it all up!

HOW

Here's how we did it:

1. Geomapping trash:

We started in september and continued until mid-April 2008.

With the help of **720 volunteers**, we mapped **10 656 illegal waste dumping sites** all over Estonia. One of our core-team members, Ahti Heinla, developed a special software for this, based on Google Earth.

The biggest local mobile phone connection provider **EMT** gave us phone cards and free data transfer, **Nokia** gave us GPS phones and a small Tartu-based company **Nutiteq** developed another necessary software for GPS phones to mark each dumping site and its width and content separately. **Estonian Map Centre Ltd** us very good quality maps.

Ahti's **Goole Earth based program** provided us with real time information about illegal dumping sites. If someone pushed a button in the forest, Ahti could immediately see the trashpoint appearing on our Google Map real time.

Starting from September the database of our volunteer geomappers grew and grew on the account of crosscountry orientators, adventure clubs, crazy environmentalists. Some even mapped garbage during the nighttime (although it was quite dark anyway – because it was Estonian winter). During this time many, including Ahti, them spent most of their free time in the forest mapping garbage. One man from Kuusalu was actually even responsible for mapping over 800 trash-points in his area (that is 7,5% of the whole amount of trashpoints). By doing that all those wonderful people held up the motivation and belief of even team members, that all this is truly possible. We didn't lose faith and kept on

working.
Starting from February, we organized **9 weekend geomapping events** in 15 different counties of Estonia. During 2 weekends we were able to organize mapping-events in 3 counties at the same time. During the last weekend of geomapping alltogether 50 cars together with at least 100 people were mapping trash around whole territory of Estonia.

Most volunteers were people who showed up after reading about the event from a local newspaper. Other people whom we invited were people from local governments and organizations. All of the mappers were **we instructed onsite in the morning of geomapping, at the meeting point.** Also many of our core-team members joined these events every weekend. Many devout geomappers mapped more than 100 trashpoints alone. Many extra geomappers acted on also separately after those events and used again all their spare time to mark trash around Estonia.

Estonian army took part in this sub-project with at least 200 “professional geomappers”.

Most of the people were first time users of GPS.

In the end of mapping period, each of the illegal dumping sites had an ID code on the map, relevant descriptive data and most of those sites, also a photo. Such details were important for our logistics planning for the cleanup day.

The map itself was located online at our webpage. Everyone could follow the process of waste sites being mapped, just by monitoring the online waste map in real time**.**

A detailed overview of the mapping process by Anneliis Ahveldt, the head-coordinator of geomapping team:

„Mapping trash!

What is mapping?
Marking trahspoints and spots through moving around on roads witha a GPS device and carrying this information on to a map.

Who are mappers?
A mapper could be anyone who is old enough to evaluate what is garbage and how much of it is there. In a project like this mappers can let the team know about their wish to attend the mapping process, after which a team member and the mapper will agree on a region of mapping, necessary passwords for entering information to the database will be given and also the time of mapping will be settled, during which the mapper will do his/her job and when to expect for feedback. The mapper will go out mapping him/herself or with his/her

companions on a suitable time and takes care that his/her points will definently get to the map as well.
In addition to mappers, other people can as well help them with adding this data to the database or just gather together the information of their local territory or region or the data of another group of mappers. The person entering information to the database doesn't definently have to join the mapping itself.
Mappers are usually people who orientate very well, have a good memory and could (even without GPS) determine the coordinates of a trashpoint using a paper map or an internet map and send this information to a person entering data to the database or add this info themselves.

In Estonia it was very comfortable to find coordinates of a specific place with Delfi.ee-s, Regio-ee-s or Estonian Land Board's digital map on http://xgis.maaamet.ee/xGIS/XGis

What can you map with?
For the mapping process either hand or car GPS-devices created for hikers, phones with an integrated or an external GPS device or digital maps can be used. The precondition of the last option is that the mapper knows very well where the trashspot is and also has a very good digital or a papermap for detailed coordinates.

How does the mapping process take place?
On has to moving around on roads systematically and stop when one notices a trashspot to detemine the coordinates of a specific location. In addition (in our project) it was important to determine the diameter, heith (if it was over 1 m) and the content of the garbage spot. In our selection we had P – for regular domestic waste S – for large-scale garbage (refrigerators and sofas etc) and R – for tires. As a comment we always could specify if this spot also contained hazardous waste, if it was in a hole, on a slope etc. If the garbage is located on a bigger area in small pieces, then those small pieces should be calculated together as one spot. For coordinates it would be good to mark the center of the area.
Adding photos while mapping trashpoints is advisable but not obligatory. The photo can describe very special dumping sites or just give an overview of their size and content.
While mapping garbage it would be reasonable to go through all roads of certain territorial unit systematically.
In the end of the day the mapper subjectively determines the percentage of the specific territory which got mapped during this day and lets the team know about it to make conclusive calculations.
For mapping all transportation vechicles end even moving on foot are suitable. Probably the most comfortable way of doing it, is with two people and a car – while one of the team-members is driving the other one can very well be the map-reader. And both can look at the road-sides to see if there's any trash.
There is little if any point to mapping stones and wood (In Estonia some people also take building materials and furniture to the forest), because those are not

very dangerous to the environment. They also give a lot of weight and volume to waste transportation cars, because of what it might happen that a noticeable part of „important trash“ like domestic garbage stays in the forest.
It is very important to be careful with privatly owned land and articles, because what might seem like trash to some eyes might not be that in the eyes of the owner to whom it might be a thing of historical or even practical value. For ex. Tractors, argicultural machines out of metal, heaps of building materials etc.

What to do with the mapped points?
Mapped trashpoints have to be taken from the GPS-device to the computer and from there further to the trashmap. Single points, which have been taken from a digital map, can be added one by one to the trashmap. GPS-moble-mapped points went to the trashmap in our case, real time.

Where to find garbage from?
It's very important to map both in the city and in the countryside. In towns it's important to look at border-areas, abandoned grounds and decayed houses. It's also good to check parks and beaches.
In the countryside again borders of small villages and towns, all roads which turn into the forest (and which are not marked as private), old military sites, territories of old argicultural societies (during soviet time we had places like kolkhoz around her), neighbourhoods of old garbage heaps and strip mines are worth paying attention to.

What kind of infotechnological programs would one have to use?
For us it was very comfortable to use a program called Nutimap (www.nutiteq.ee), which in addition to being an interactive map also enabled us to map trash (with a special software).

Trash-database (in our-case Google Earth/Google Maps based) – all trashpoints were added to this database separately or as GPS tracks. The database had users, who with given passwords could add, remove or edit data in an area which was appointed to a him/her. The administrators of this database saw all added points, could add data to all areas, could add users and change their rights.

The trash-map and the table of statistics – the trash-map showed the latest information as a map of the country with all trashpoints which had been added up to that moment. The table of statistics showed the latest data throughout all the local government territories, the volume of the trash and the percentage of the totally mapped area. It was also possible for us to look at trash-points only on specific local government territories. That was good to get an overview (and it was especially good for local coordinators of our project. The database was updated online as soon as the next trashpoint was added.

What kind of coordinates can one use?

To mark trash-points all widely known coordinate systems will do. One can use latitude and longitude and L-est system or the one which is mostly used in the military. Our program accepted all coordinates and transformed them to a common system. For adding saved GPS-tracks to the database the program accepted files with extentions likeGPX, UPT, WPT, PLT, GDB, KML and KMZ. When adding photos the size was not important because the program also accepted zip-files.

What is an organized mapping?

The most effective way of mapping trash are organized events. One can map trash with friends, family, colleagues or club mates. In the morning it will be settled how many "carfuls" of people will go out and specific territories will be devided to everybody. It is perfect to have a discussion group and soup for all in the evening to get a good overview of the whole day! :)

Organized week-end events allow all interested people gather and map a very large area of earth during 1-2 days. Even total strangers can cooperate and do that as a team. It would be very good to engage local government authorities or just local people to this as well to ease the process and make it more fast. Like this one can also organize mapping events for their company or organization.

Why is mapping important?

The volumesof trash which can be calculated as a result of the mapping process is bases for all the following work, namely logistics planning, organizing transportation and in the end cleaning it up! After the number on trashpoints which we get as a result of the process we can also determine

- *the estimate number of volunteers which is needed to clean it up,*
- *the necessary technical instruments or machines needed and*
- *the optimal place of mid-stations for gathering trash.*

The volume and sort of garbage are important for deciding on the necessary technical instruments to clean it up.

And finally: the quality of the mapping and mapped date are very important for the planning of all the following work. The whole database of trashpoints was to a great extent (even financially) the basis for evaluating the size and weight of the project.

Geomapping description by Ahti Heinla, the creator of mapping database, mapping application and logistics IT-system of Let's Do IT 2008 :) (also includes techical data on database setup).

*"**We set up a mapping sub-project, which had the goal of putting every garbage point in Estonia into our database. The purpose of having such a database is:***

- *get information about the total amount of garbage we have to clean: project budget, public statements, logistics etc depend on it*

visualise the problem for the public: media wants visual material, and when people see a map and photos, their awareness of the topic will improve
get input for logictics planning

The mapping sub-project consisted of the following major tasks:

develop a web-accessible database (GIS) of garbage points. We used PostgreSQL+Postgis as the underlying database, mod_python+Apache for web access, all running on a Linux server. The code is ca 1500 lines of plpgsql and SQL and ca 1500 lines of Python. Writing it took 1-2 man-months - but it is relatively complex code and it can easily take more time by less motivated or experienced people

develop a Java application for mobile phones for simple real-time data entry from the field into the database over mobile Internet. The mobile phone has to have an internal GPS, or external Bluetooth GPS module. This Java application was developed by Nutiteq (www.nutiteq.ee)

write a 2-page instruction manual for volunteers doing the field work of mapping - how to search for garbage points, characterise them, and enter them into database

find, motivate and coordinate volunteers for field work. This was done by Anneliis, working part-time over ca 7 months. She targeted the communities of geocaching, orienteering, offroad driving enthusiasts, and large organisations such as Eesti Energia and Estonian defence forces.

organise regional mapping group events on weekends. Most participants were first-time mappers, so the process was made quick&easy for them: ca 20 people gather in the morning in a regional centre, they receive oral&written instruction, get precofigured mobile phone with GPS, get a specific area assigned to them, spend the day driving in this area and enter data, and gather again in the evening to return the phones and report on progress. These events were organised by Kadri, Irmelin, Kaia, working part-time over 3 months.

manage/admin the database, remove duplicate points and obvious errors, identify poorly mapped areas, create user accounts. This was ongoing work during 9 months, done part-time by Anneliis and Ahti.

The ideal mapping team has a 4WD car, 2-3 people, a GPS or GPS-equipped mobile phone, and a camera. If there are no major problems, such a team was able to map ca 200 square km per day. In practice however, some teams had problems - misunderstood instructions, had empty GPS batteries, got lost in the area, worked less than expected, etc. We needed to re-map such areas and thus in the end used ca 2x more teams.

The mapping sub-project found ca 0.25 garbage points per square km. We estimate that about 90% of garbage was found; higher accuracy is difficult to achieve because people always make mistakes and fail to notice some of the garbage if it is out of sight, especially if even a little bit of snow is present.

Apart from coordinates, the primary characteristic of a garbage point is its diameter. From the diameter, the database calculates volume (using average height of 0.25 meters for large diameters, less for smaller diameters) and from volume it calculates mass (using 200kg per cubic metre if there are no tires).

Using just diameter as basis for volume calculation is not very accurate; however, it is difficult to teach an inexperienced volunteer to measure/calculate the volume in any more precise manner.

Our database has three methods of data entry:

> *on the field, the mapper marks garbage points as waypoints/POIs in handheld GPS, takes a photo, and writes the diemater, photo filename etc as waypoint description. After returning from the field, the mapper connects the GPS to a computer, reads the waypoints file into the computer, and uploads it into our database along with a zip-file with photos. This method is suitable only for the small minority of mappers who are experienced with GPS units and software.*
>
> *on the field, the mapper uses a handheld GPS and records points using whatever way s/he wants. After returning from the field, s/he reads coordinates from GPS screen, and types individual point coordinates, diameters etc into a web form. Photos are also uploaded one by one. This method is cumbersome for large amounts of data, but it is easy to understand.*
>
> *on the field, the mapper uses a mobile phone with Nutiteq software to enter the point into database in real-time, selecting the diameter and other characteristics on the phone screen.*

Photos could also be uploaded, but it is more difficult to use, expensive, and technically not very reliable. Mapping using mobile phones is the easiest method to use for non-technical people."

2. Searching for partners from the private, public and NGO sector to participate:

In order to make it all work, Let's Do it Team engaged a huge variety of different companies, NGO-s and organisations who were literally part of our team: some companies organised their own internal campains to engage people, a big number of companies joined with their staff on our clean-up day, many gave us financial and campaigning support and discounts. The last was especially important when it came down to waste management companies and their cars and containers. Have you ever heard about waste management companies who come out (and not just out, but out to forests to clean up illegal waste) only for transportation costs? Well, that happened in Estonia.

All waste management companies joined their hands and came out on the 3rd of May only for transportation costs. And no-one charged us any extra in

end-stations. The only thing we had to pay was pollution tax for the government for 7000 tons which was the final amount of trash (btw 75% of this pollution tax goes directly to local governments).

Some say that in usual circumstances our project would have lasted for 3 years and would have cost 22,5 million euros. But it was done in only 1 day and 0,5 million euros thanks to all of those 50 000 loving people. The majority of the cost went to take care of the waste handling process and was covered by Estoninan Ministry of Environment, The State Forest Management Centre and Environmental Investment Centre.

Finally everyone in Estonia was involved during this day and everyone came and gave our team a helping hand with whatever they had to offer: cars, trailers, people, computers, food etc. **That kind of kindness and cooperation on behalf of Estonian people was truly phenomenal.**

What was important concerning companies was the fact that **none of them demanded any kind of special public treatment for supporting the project.** Everybody was content with just a name (in text version) in list of partners on our website! This project got so much positive public attention, support and respect, that in the end it was just a huge honor to be in this list. Of course we always mentioned and thanked our partners when we had the chance, in public.

Thinking back it was probably one of the few times in Estonian history altogether when sponsors and supporters didn't ask for any special public attention and promotion for themselves but stood hand in hand for the purpose of the whole project!

The extensive circle of partners included one of the largest telecommunications companies in Estonia (EMT, Elion),the biggest energy producer and provider (Eesti Energia). Our strongest third sector partners were Estonian Network of Nonprofit Organizations (NENO) and The Estonian Song and Dance Celebration Foundation (includes all dancers and choir singers of Estonia of whom there are plenty around here). We also engaged all environmental NGO-s, scouts, guides, 4X4 fans, even divers and cliff-hangers joined.

MTV, TV3, Kanal2, ETV and other television channels operating in Estonia, most radio channels, all daily and weekly newspapers, local newspapers, radio stations etc.

Additionally, we were let 200 mobile-phones with GPS-systems for geomapping as a support from Nokia. EMT provided 100 extra-phones and 600 phone-cards for all the team members to **talk for free** to be able to organize such a huge scale event!

We also received non-financial support from Ministry of the Environment of

Estonia during a crucial time when big waste management companies turned their backs on us. The ministry of Environment gathered all waste companies around a roundtable to find ways to still support the project.

In the end all small Estonian waste companies gave their helping hands and made it possible to recycle 40% of the gathered waste. We also received the everlasting support of the whole 3rd sector of Estonia; the personal support of the President of the Republic of Estonia in the form of public support and speeches and several other important organisations and institutions (be it either 3rd sector, governmental, enterprise or even international).

3. Building up a network of local leaders who help to plan and manage the clean-up day.

The crucial part of our project was to engage 1-2 local leaders from each of the 227 local governments in Estonia. In the beginning it was very hard to explain the idea of this project to them, because very few people from the local governments honestly believed in the possibility and success of the project (it just seemed too huge). But as time passed by and as the media campaign started, everyone was more and more convinced that it's actually possible. Public trust started rising thanks a huge PR and media campaign which engaged literally **all people in Estonia.** You must have lived underground if you hadn't heard about it. **It was truly everywhere: outdoor, print, tv, radio and internet!** By people's own initiative, our webbanners were produced, shared and uploaded to 1600 websites. Calculating the possible costs of the whole thing: it is unquestionably the biggest media campaign ever made in Estonia.

Thanks to great media interest, support and extensive coverage of the project everyone wanted to join the action and it was already a demand from the public that local governments would join the initiative and offer their cooperation of the local level. In the end it was even considered as utter ignorance and negligence if the local government didn't join. It was truly a matter of honor to be part of the team. Finally, only 7 out of 227 local governments in Estonia didn't join the action. Many of those 7 did their own cleanup day separately from Let's Do It in the surrounding weekends of 3rd of May (largerly because of the local public pressure).

In Let's Do It project regional coordinators were responsible for coordinating the project on the local level. Every county had a county coordinator on behalf of Let's Do It Team. Logistis and registration process were coordinated centrally, but local coordinators hand in hand with the local governments were responsible for organising the food and also some of the necessary materials like gloves for volunteers during the clean-up day. They were also responsible for the transportation of hazardous waste.

Core-team members and waste management companies in co-operation with producers and other responsible organisations were in charge for handling electronical waste, tyres and regular waste. Local community leaders were extremely important in logistics planning and geomapping, because they knew about the local circumstances and could help Let's Do It! team with local data and knowledge.

4. Building up a broad media campaign prior to the clean-up action to recruit volunteers and raise public awareness of the dumping and littering problem.
(by Tiina Urm, media and communications manager of Let's Do it 2008)

The media campaign aims to link the issue to the impacts that everyday life choices make on our environment. Our most important partner here was Estonian Public Broadcasting service (includes television and radio channels) who helped us by funding and developing commercials for television and radio and airing them in the Public Broadcasting channels. They also allowed other television, radio and internet channels to use these commercials free of charge.

When we started our mission, nobody hadn't even acknowledged the problem. When you talked to different people in a personal level, they said that they had noticed that there is quite big amount of garbage lying around the areas that they live in and it was disturbing them. But nobody was talking about it publicly. There had been local actions to fight the problem, led by local municipalities or activist groups. But they had been only on local level and therefore having just a temporary effect. To really deal with the problem - which was not the garbage, but the mindset of those people doing the illegal dumping and the rest of the people who passively let it happen, we had to make it a public mission. Not just a 'green minded' people's business but everybody's concern and interest. In order to break this barrier we needed to overcome some certain challenges:

1. Bring the problem into the public eye.

As I explained earlier - the problem was not even publicly discussed, for a very simple reason - nobody had any idea what is the bigger picture - how bad it really is? The key was to show the real extent of the problem and through that we could attract the attention on a national level.

The best way to do it was to just simply put the puzzle together. So we brought in the possibilities of a modern technology - Ahti Heinla developed a software which made it possible to put the garbage on the map. First time people could see the real face of the problem.

2. Engage the local media as well the national media.

The problem covered all of Estonia, so to really make an impact and make a difference we had to get to the people in the little places as well in the cities. People in the rural areas tend to use only local media channels which cover topics mostly about local events and interests. So we couldn't just rely on the national media channels.

From the beginning we had to establish deep and lasting interest of the local people and journalists working for the local media channels. They had to recognize it as something that can create a real difference in the lives of themselves and their neighbours. To make the first real impact we could use the weekend garbage mapping events - every weekend we invited local people (incl. journalists) in certain area to map the garbage in their county. This way we could make them see and acknowledge the problem on a personal level. To keep the interest alive we used very simple method - every local or national media contact we gained, we added to the presslist. By time, a growing circle of journalists was formed, who we kept updated regularly about all the progress and news related to the initiative.

3. Include russian-speaking community.

Estonia has one major distinct cultural subgroup - ca 350 000 people, belonging to a russian speaking community. The overall population of Estonia is only 1.3 million people, so this is a big part of our nation. Majority of the group lives in Tallinn or in East-Virumaa. Since then there hadn't been any bigger initiative in a civic level which would have involved estonian speaking and russian speaking community together. This was clear from the beginning - if our goal was to create a general impact on the society, we had to include the russian-speaking community. What made it tricky was the fact that they have different pattern of media using habits - they don't use estonian national media, but russian TV-channels and First Baltic Channel (PBK) which also uses russian language. Russian community also relies more on community ties and is at the same time less influenced by media in general. First big difference came from the support of PBK TV-channel - they agreed to air our commercials for free and they were also interested to cover the progress and news related to the initiative. Same way we targeted the other most popular russian-speaking newspapers and also web-media. The other important step was to get the support of a Narva city government - this is the city in East-Virumaa which is the main habitat for a russian-speaking community. We knew that it was crucial to get the support of the community leaders.

4. Include well-known and respected leaders from different fields, age-groups and communities, remaining at the same time totally a-political.

In every society there are people who are widely loved and respected, we asked a selection of them to help us by being the face's of the campaign. Our goal was to let people who personally care invite others to care about this issue too. We built our campaign upon a group of 12 famous musicians, writers, actors, journalists and sportsmen from russian as well as from estonian community - each one of them had an individual message touching a bit different aspect of the issue (clean country for our children, culture, self respect, national pride, unity, nature). That allowed us to vary the message so that it didn't get boring and at the same time approach very different groups with different values at the same time. The general tone of the campaign was personal, positive and uniting.
The campaign featured commercials in TV and radio channels - we got all the main TV-channels to show the commercials free of charge also the radios and main newspapers. The advertisements for print media and outdoors were made, using the same people and messages. We designed banners leading to our homepage, which people and organizations could download from our homepage and put up to their personal or company web page as a sign of support. More than 1600 webpages had our banners up as a sign of goodwill towards our initiative, at the height of the campaign.

At the same time we had to distance ourselves from political groups, especially in the first phase of the project - we had to remain trustworthy and neutral of any political interest to gather the trust and support from all the different groups of society.

5. Registrating volunteers. (by Agni Kaldma, head of registration team and volunteers' coordinator of Let's Do It 2008)

“Volunteers are the most important part of the whole operation: without volunteers you can do nothing. Wide media campaign is most likely the best way of engaging large number of volunteers, but the media part is hopefully covered already. All big organisations and firms have to be connected personally, also all municipalities. To send an e-mail and wait for the answer is not the best way of getting them "on board", they all need personal approach.

You have to keep in mind during the whole organisation process, that volunteers are people, who come to do the thing you have asked them to, from their free will and without getting anything in return. In this huge operation and big organising, especially by computerising most of the process, it can be easily forgotten. That`s why you have to find someone, who has previous experience in working with volunteers to the job. This volunteer coordinator has to think on volunteers point of view and look after volunteers rights, also to remind the whole team in all points, that volunteers are not just buttons on the screen, but living people, who have to be treated with respect and grattitude. All the questions have to be answered properly, all safety issues have to be taken care of etc.

Registration process itself needs a good program and a number of people: some of them taking care of the system and some of them answering questions, becuse you get a lot of them. At first we thought, that we can let people to register almost up to the cleaning day, but we realised some week before, that this is impossible: registration team can not do their job properly and send all information needed to the volunteers without some extra time, while the registration process is closed. So, what we learned, was that registration has to be closed a week before the cleaning day, otherwise you can not send out proper information to all registered teams. The registration was team-based: you had to make a group at least 3 up to 15 people, to register. This was that way for several reasons: 40 000 people vs 5000 teams is a seriously smaller number to send information to; also we
hoped that when one person wakes up in the beautiful Saturday morning and thinks: Oh, what a nice day, I don` t want to go to pick trash today – then it is easy to him to do so. When there is a whole team behind, he can not think this way. Also, the transportation is easily arranged, when there is a number of people in one group instead of individuals.
Several additional information was asked in registration process: team leaders mobile phone number and e-mail address (all information to volunteers was sent via e-mail to team-leaders e-mail address, also SMS-s were sent), either team has a trailer to take with them or a possibility to carry one and the specific region, where the team wants to act on cleaning day. We did not realise that a lot of problems rose from this issue, too: team could pick a region, but not specific place like a village or near his house etc. There was a lot of explaining on this issue. In the end, locals went to their villages anyway, and for that there were local people from municipalities involved in all the places, who took care of them.

We generated a personal e-mail for all volunteer team-leaders with all information they needed: teams gathering place, instructions for the cleaning day, all phone-numbers they will need etc. Also we sent them a link to their personalised map with their cleaning territory, the safety instructions and working manual. We asked the team leader in this e-mail to confirm their participation and also to confirm that they have learned about
the safety instructions. To teams, that had not confirmed, we sent SMS in a couple of days with the link they have to go and confirm their participation. Also we generated some fun SMS-s to team leaders, for instance in the morning of the cleaning day we sent SMS with morning greetings etc. Finally, I want to underline once more, that when we keep in mind, that we are dealing with people, not with numbers, everything is going to be all right!"

6. Logistics

On 3rd of May the logistics were built up in a system of so-called flag-stations around Estonia: http://www.teeme2008.ee/?op=body&id=180 which

were the optimal points of gathering garbage. And of course: people met there in the morning: so it was also a gathering point for volunteers.

Those optimal points were calculated out by a computer program, again created by Ahti Heinla.

Ahti describes how both clean up and logistics were done:

"***Cleaning up garbage was essentially moving it from thousands of places in nature to a few places where industrial-scale sorting/processing could be done.***

This moving was done in three phases:
1. Volunteers pack garbage into plastic bags and put bags on the roadside (generally on unsurfaced forest roads). When done, they notify transport teams by phone or other means and move to their next point. This requires 1 volunteer per cubic metre of garbage, assuming 3-hour workday.

2. Volunteer transport team arrives in a car with a trailer, picks up bags, and transports them to flagstation. The car cannot be a large truck, since they are suitable only for surfaced roads. Thus we are limited to vehicles with little capacity (average ca 3 cubic metres). Transport team spends most of its time loading and unloading. This phase requires 1 transport team per 25 cubic metres of garbage, assuming they work 4 hours (a little longer than other volunteers) and average trip distance is less than 10km one way.

3. Large trucks (20-90 cubic metres) carry garbage from flagstation to sorting/processing centre. Thus all flagstations must be on surfaced roads. One truck does ca 3 trips per day, assuming 8 hour workday and ca 30km average road distance between flagstation and destination. Thus 1 truck-day is needed for 100 cubic metres of garbage, assuming average truckload of 33 cubic metres.

The point of having flagstations was twofold:

> *provide a place for people to gather - the local centre of activity where teams meet, discuss their plans, get plastic bags, tools, advice etc*
> *provide a changeover point from unsurfaced to surfaced road vehicles, and ensure that there are usually volunteers around for loading/unloading when a truck arrives*

How many flagstations were needed? We used 1 flagstation per 200 square km on average, and put them near large garbage points to minimise transport team travel. Our software optimised the locations using a clustering algorithm written in plpgsql, and a vector map of roads obtained from state authorities.

Each garbage point is assigned to the closest flagstation by road distance, and the database calculates the number of volunteers (phase 1 above) and transport teams (phase 2) required in each region and each flagstation. Using this information, the volunteer registration website disallows new registrations in

regions that have exceeded their optimal number of volunteers by more than 2x.

The software assigns each volunteer team to a suitable flagstation, and specified whether they are regular team or transport team. For regular teams, a number of specific garbage points are selected too."

Important dates:

September 2007 – Mid-April 2008: The Google Map based trash-mapping program with mobile applications was launched (programmed by Ahti Heinla) in September 2007.
From there on the geomapping process started, during which group mapping weekends were organized all around the country and individual mappers were in action to map the areas of their choice. The most of the territory of Estonia was covered.

6th of November 2007: The PR campaign started with the first press conference – the whole thing was in the news in the biggest tv-, radiochannels and in newspapers. From there the work continued with all the local channels.

February 2008 – Mid-April 2008: 9 geomapping events around Estonia.

15th of March 2008 - Beginning of the media campaign (estimated cost: 3,66 + million Estonian kroons, which we all got for free).

21st of March 2008– Registration began on our website for the clean-up day.

1st of April 2008 – Estonian Army cleans up the biggest dump near Tallinn (over 200 tons of waste) and opens up the cleanup action!

2nd of May: logistics software ready.

3rd of May 2008– a country-wide Clean-Up Day (more than 50 000 people show up, in our wildest dreams we had thought about 40 000). Logistics software: live updates to both teams working in the logistics centre in the National Library: for both transportation logistics team and flagstation check-up team got a program according to their needs. When they needed something, a team of best programmers of Skype, wrote it in minutes.
Working day finishes in 207 flagstation after sunset. Most volunteers finish by 5pm.
All national and local media channels were out in the field, covering the action on the spots and national TV-channel and radio channels broadcasting a special show about the day and it's results and stories. Press conference was organized at the afternoon. Also many reporters from international news agencies and media channels were in Estonia, covering the event (Reuters, BBC, Deutsche

Welle etc.)

4th of May - Thank-You concerts for the volunteers in three biggest cities - Tallinn, Tartu, Narva

17th of May– after-clean up in Haabersti (one of the city parts of Tallinn)

29th of May – thank-you event for all partners and friends of the team, including the team itself!

June 2008 – summer-camp of Lets Do It team to generate new ideas on what to do next!

What Do you think?

Let's Do it! World

www.letsdoitworld.org
www.teeme2008.ee