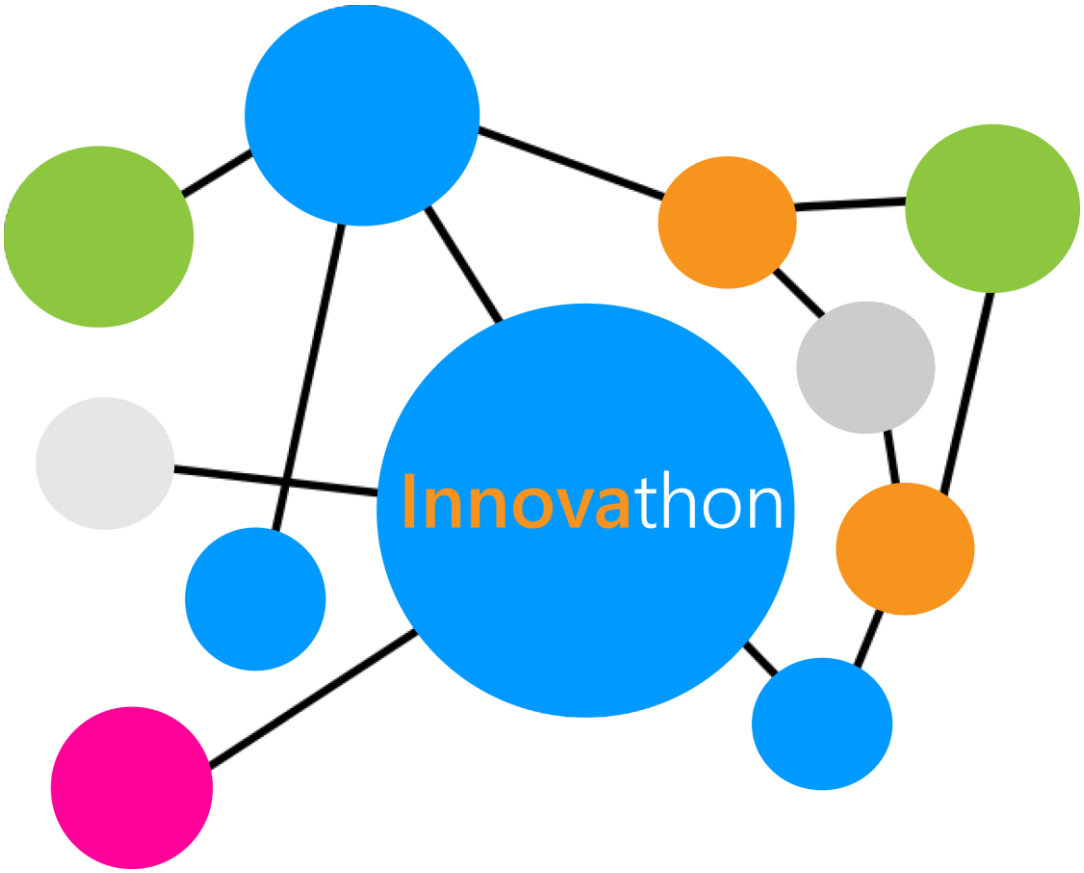


Nepal NCO
May 2015

Social Policy and Economic Analysis Section
UNICEF Nepal

unicef

Preface

'Innovathon' was a series of innovation events focused on technological innovation. Child Gameathon and ChildApp Appathon were two pioneer events under this project in seeking technology-based solutions to the existing challenges faced by Nepalese children. The heart behind this initiative was found on the goal to inspire and motivate the country and its youths that solutions to their community's problems are found within themselves and not from the outside. At the center of the Innovathon project is Nepalese youth who are technological savvy, ambitious, and willing to think differently. They have come together at these competitions in the name of programmers, developers, project managers, and strategists to develop applications that may lead to sustainable development for Nepalese children. Youngsters trying to help other young children solving their problems - this is how Nepal will develop. We take this opportunity to specially thank Microsoft Innovation Center Nepal in its collaborative efforts in organizing these events for the young potentials of Nepal. We at UNICEF Nepal are committed to support the youth hand-in-hand, and unlock their potentials so that their dreams of helping their communities can be realized through their gifted talents.

Tomoo Hozumi
Representative
UNICEF Nepal Country Office

Acknowledgements

This report documents the Innovathon project, where innovative ideas to help solve problems related to children in Nepal were crowdsourced and developed by Nepalese youth through technology at a gameathon and an appathon. The report was prepared by Ko Woon (Cori) supervised by Amjad Rabi, Chief of Social Policy and Economic Analysis.

Conceptualization were contributed by Amjad Rabi and Allen Bailochan Tuladhar. Interviews and sketches of the events were contributed by the team in Microsoft Innovation Center Nepal. All infographics and designing of this report were delivered by Ko Woon Park. A number of organizations and individuals contributed extensive support in this initiative, acknowledged in this report.

Contents

Abbreviations

ADAP	Adolescent Development and Participation
CCH	Child Care Homes
CCWB	Central Child Welfare Board
CWIN	Child Workers in Nepal
ECD	Early Childhood Development
GBL	Game-based Learning
GIS	Geographic Information System
INGO	International Non-governmental Organization
HDI	Human Development Index
IVC	Interactive Virtual Classroom
IT	Information Technology
JE	Japanese Encephalitis
MDG	Millennium Development Goal
MIC	Microsoft Innovation Center
MICS	Multiple Indicator Cluster Surveys
MOE	Ministry of Education
NDHS	Nepal Demographic Health Survey
NGO	Non-governmental organization
NSDRM	National Strategy for Disaster Risk Management in Nepal
PHC	Primary Health Center
PTA	Parent-Teacher Associations
SMC	School Management Committee
SMS	Short Message Service
TB	Tuberculosis
TDH	Terres des Hommes
UNICEF	United Nations Children's Fund
VDC	Village Development Committee
WASH	Water, Sanity, and Hygiene

Executive Summary

Over the last few decades, Nepal made significant advancements in social development despite its ongoing socioeconomic complexities and geographical challenges. The data visionary and global health expert, Hans Rosling quoted in his recent visit to Nepal, "Never before in the history of the world has any country made so much social progress with so little money." However, there is still a long way to go for a higher-level Human Development of the country. Nepal ranks 145 out of 185 countries according to the Human Development Index (HDI) as of 2014. Against this background, there has been an increasing recognition that the conventional trickle-down approach alone to tackle development may be insufficient in realizing accelerated as well as equitable development. The realization for the need to find new solutions to the challenges facing societies has led social innovation to take a central stage supported by decision-makers at the highest levels worldwide. This is coupled with the wave of technological advancements and the enormous expansion of the possibilities frontier brought about the new technologies. At the center of the emergence of social innovation movements worldwide, and especially in Nepal's demographic architecture are the young and motivated new generation. They are technological savvy, ambitious, willing to think differently, and willing to take risk.

In this context, this case study documented the planning and execution of 'Innovathon,' a marathon of different innovation events pursuing technological innovation with the youth of Nepal. Two events under this project, 'Child Gameathon' and 'ChildApp' appathon were implemented to crowdsource homegrown innovative ideas to help solve issues related to children using technology.

> *"Youngsters trying to help the young child in solving their problems, this is how Nepal will develop.*
>
> *We at UNICEF are committed to help and support you hand-in-hand."*
>
> **- Tomoo Hozumi,**
> Representative,
> UNICEF Nepal

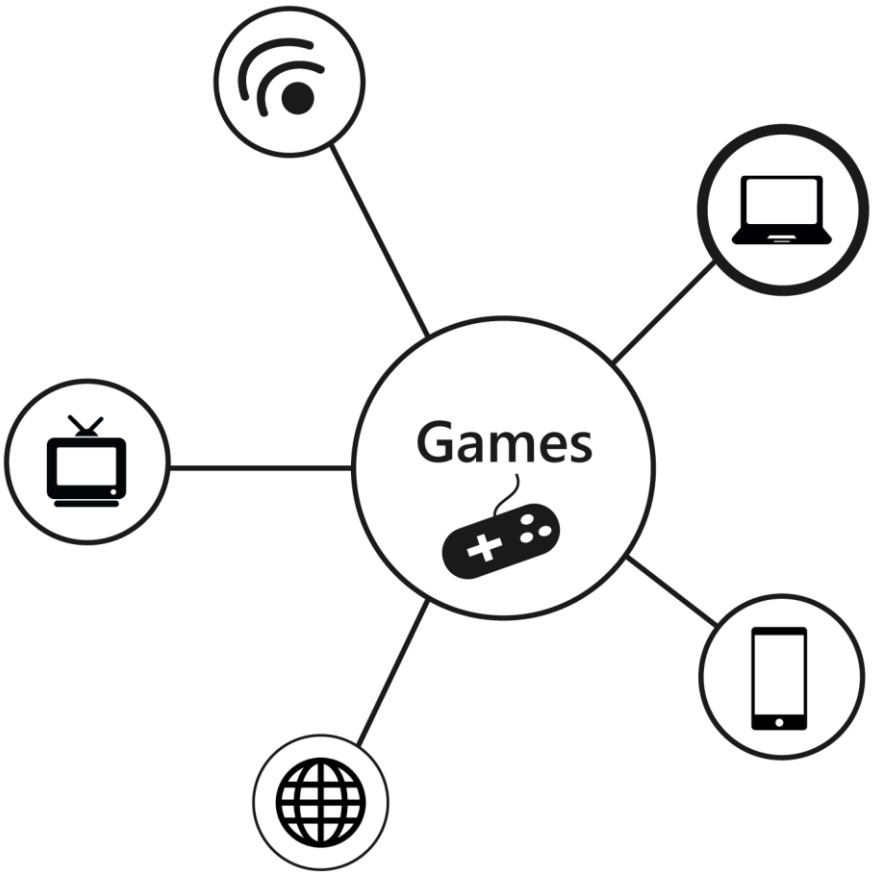
A joint initiatve by UNICEF Nepal and Microsoft Innovation Center Nepal, Child Gameathon was an appathon to develop innovative and fun game applications that improve children's learning outcomes. Inspired on the idea "learning by playing," the event was held in Nepal April 17th-19th, 2015. 101 young developers, programmers, and designers came together as 29 teams and competed in the 54 hours game development race. The winning game applications were games to educate children on healthy foods, a motion-sensing game that enhances creativity, and a three-dimensional interactive game about girl trafficking.

Similarly, ChildApp Appathon was an application development race organized by UNICEF Nepal, Microsoft Innovation Center Nepal and Childreach Nepal on June 2014 to seek innovative solutions for problems around children in Nepal such as birth registration, child marriage, water sanitation, etc. 102 young developers came into 29 teams to compete in the 54 hours application development race. Applications such as assessing real-time water quality, interactive visual learning, and SMS for birth registratations etc. were some of the winning solutions.

Innovathon aspires to become an innovative model that pursues accelerated development of Nepal through technology led by youth.

01
Child Gameathon

"Learning by Playing"



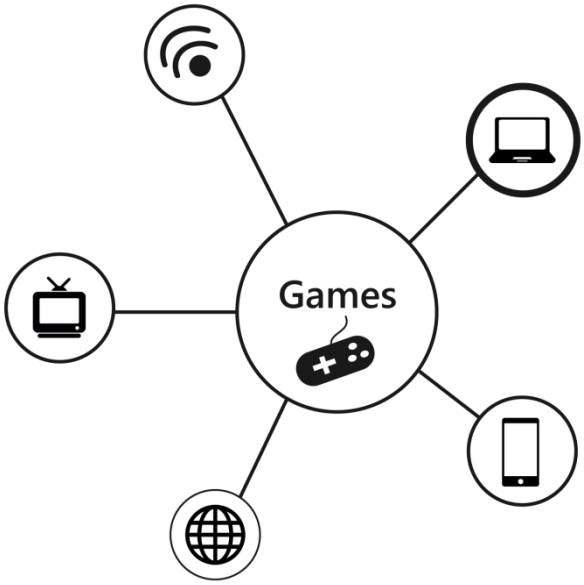
Child Gameathon

Snapshot

Event	**Child Gameathon**
Event Period	April 17-April 19, 2015
Location	Kathmandu, Nepal
Who	Developers, programmers based in Nepal capable to build and design game applications
What	UNICEF Nepal and Microsoft Innovation Center Nepal collaborated to organize a Gameathon, an appathon to develop innovative and fun web, mobile and desktop game applications. 101 young developers, programmers and designers came together as 29 teams for the 54-hour game application development race. They gathered to work towards in developing games that can improve children's learning outcomes. Participants were briefed about the various issues concerning children in series of college roadshows, bootcamps where they learned the right skill set for the appathon, and Ideathon session to brainstorm ideas and basic proof of concept before the event. They also visited a local school and primary health care centere to learn about the issues first hand.
Objectives	To develop innovative and fun web, mobile and desktop game applications that improve children's learning outcomes
Timeline	February 2015: Event conceptualization Promotion started/ Boot Camp started College roadshows started / Ideathon session March 2015: Boot Camps continued Roadshows continud April 2015: Shortlisting of applicants Shortlisted applicants visit the field for first-hand experience of the problems on ground April 17-19, 2015: Gameathon competition for 2 nights, 3 days May-June 2015: Intensive training of top selected teams at Microsoft Innovation Center Nepal. These teams will then compete amongst themselves and the final winners will be announced thereafter
Results	101 participants into 29 teams from 20 colleges were shortlisted to compete in the development race. 7 teams were awarded as top finalists. 1st place was team 'Engima,' on teaching children healthy food. 2nd place went to 'Creatu,' with a motion-sensing game that enhances children's creativity. 3rd place went to 'Octavian' with their three-dimensional interactive game about girl trafficking. Finalists will receive 3 months of intensive training at MIC Nepal to help teams perfect and scale up their game applications into sustainable business solutions.

"Learning by playing."

Child Gameathon was organized to develop innovative and fun game applications that improve children's learning outcomes



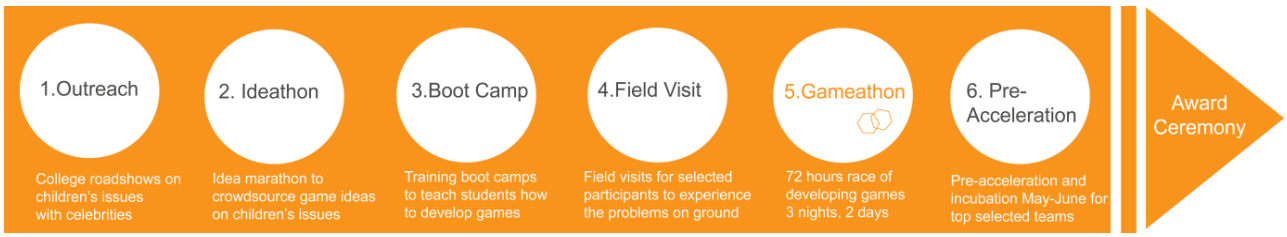
Concept

Games play a vital role in the development of the children. It is not only good for child development but also helps in educating them about a subject or develop a particular skill in them or learn about healthy habits. Games can teach a child about what is good and what is bad in an interactive way.

UNICEF Nepal and Microsoft Innovation Center Nepal collaborated to make an effort that identifies and develops an innovative model to develop interactive and interesting games that can improve children's learning outcomes. The first step towards this goal was organizing a Child Gameathon, an appathon where game designers, developers, strategists and project managers who want to make a difference through technology gathered and worked in an unnerving, challenging and fast paced event setting to develop many innovative game solutions. Child Gameathon, an ambitious and transformative initiative, leverages on the capabilities of challenging development professionals to create an innovative game solution with technology.

Process

In the Gameathon, game developers, designers, programmers and technical people team up and compete against each other in an energetic race of programming to develop innovative game applications. Prior to the grand competition, outreach efforts through college roadshows, technical boot camps, and ideathons were conducted to reach maximum target participants. Out of the over 275 registered applicants, 101 individuals were shortlisted to compete in the Gameathon. This group visited the field in Kavre district to have first-hand experience on the problems and struggles in rural villages. The shortlisted teams came together on April 17th-19th, 2015 to compete in the 54 hours to development race. Top 3 teams will receive cash prizes of NRs. 2,00,000, 1,00,000 and 50,000 as the first, second, and third prize respectively. Including the three winners, top performing teams from the competition will receive 3 months of intensive training at MIC Nepal to help them finalize, perfect and scale up their game applications into sustainable business solutions.

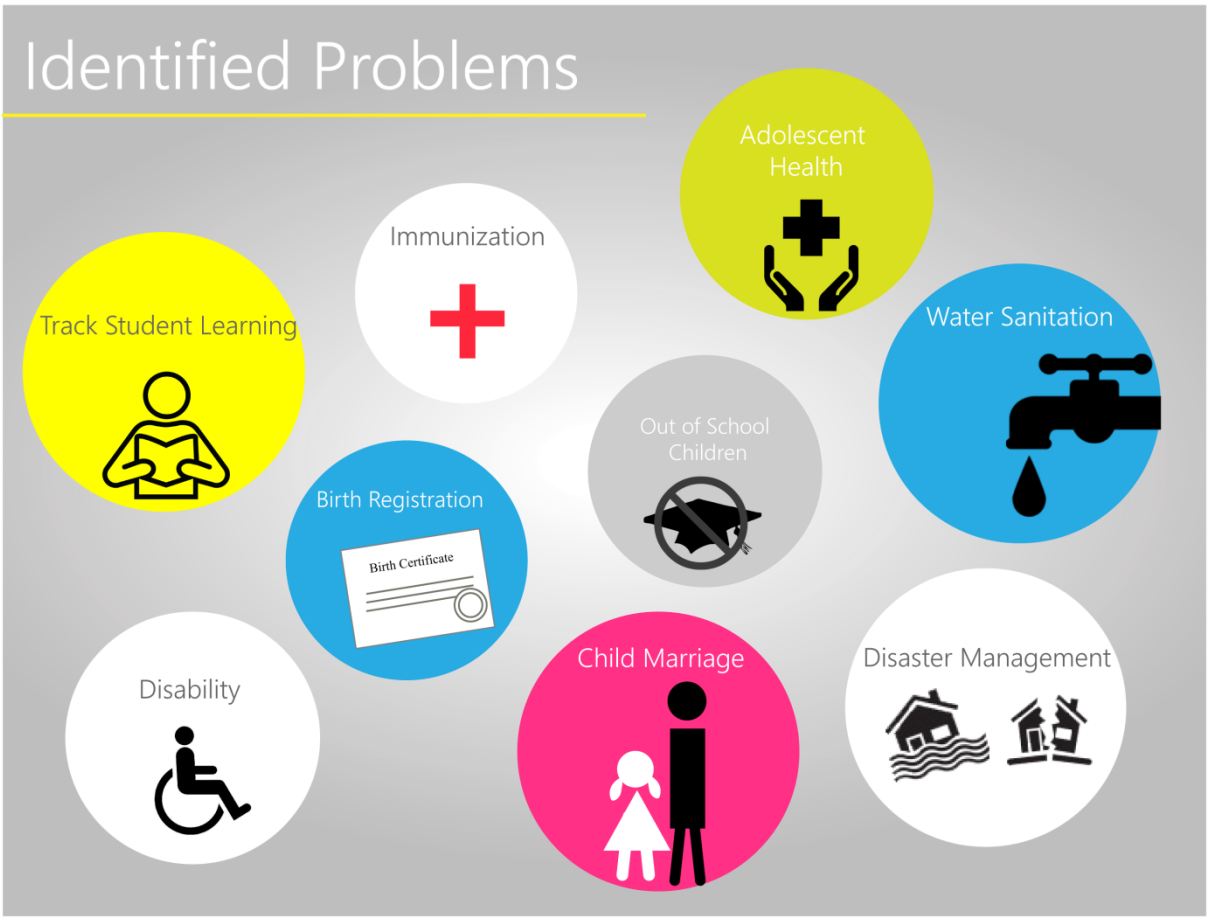


Program Flow

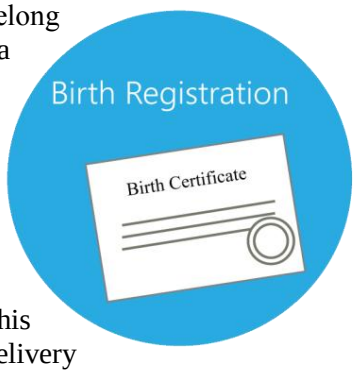
Child Gameathon officially launched to public February 2015. During the 3 months of activities leading to the grand competition, UNICEF played primary role providing domain expertise and Microsoft took lead with technical expertise.

Problem Statements

9 problem statements were proposed by each Program Section from UNICEF Nepal. These problems were the most pressing challenges to the development in Nepal related to children, and ones that may be improved through technology. In addition, an open statement was offered to the participants. If the participant thought that other problems than the ones proposed were more pressing issues, he or she can choose to tackle this problem at the Gameathon.



1. Birth Registration



Registration of a child's birth is a critical first step towards safeguarding lifelong protection. For birth registration to be complete, birth reporting is a mandatory prerequisite. Family member has to fill up an informant form with date of birth, sex of child, name of parents and son on. Without it, birth certificate cannot be granted. Birth reporting in Nepal follows a manual recording process of collecting basic information like child's name, date of birth, age and parent's name. Not surprisingly, births are not properly reported to the Village Development Committee (VDC) secretaries. Lack of birth reporting channel, especially among home deliveries in remote communities, is a nationally acknowledged problem. This situation adds pressure to the Government and VDC in planning for the delivery of basic services (e.g. immunization, child grant in Karnali districts etc.) as well as resource mobilization and budgetary allocation. Further, birth reporting can provide a powerful monitoring tool that helps in identifying the number of birth in a certain period of time and compare with the number of birth registered officially. If there is a wide gap between the two, the VDC will be easily pinpointed and the secretary will be pressured to act.

The MICS preliminary findings 2015 showed that about 58.1 percent of children under the age of 5 in Nepal have their birth registered. The impact of lack of a birth certificate on the individual cannot be underestimated; it is a passport to protection and is required to access an increasingly wide range of services, entitlements and opportunities. Children who are not registered are excluded from many of the benefits of citizenship. A birth certificate can help to protect children from situations of exploitation and violence, such as child marriage and child labor, and achieve convictions against those who have abused a child.

2. Water Quality

While 85% (93%- MICS-2014)) of households in Nepal have access to improved drinking water (Nepal MDG – Progress Report), there is little attention to improve the quality of water delivered. Water pollution and contamination remains one of the most serious public health problems in Nepal. Shallow ground waters are at risk from contamination of pathogenic bacteria, pesticides, nitrate and industrial effluents. Many of improved or so-called 'safe' water sources may be contaminated through seepage of raw water or wastewater around the outlet, at the source, or in transmission. According to MICS 2014, 71 % of households use E. coli-tainted water source (≥1 cfu/100ml). Only 14 % of household members in households using unimproved drinking water use an appropriate treatment method. These explain the main reason behind incidences of diarrheal diseases not decreasing significantly despite of increased accessibility to improved water supply.

The other key reason being that Open Defecation Free environment itself is not yet enough, also good hygienic household surroundings, sanitary inspection/ survey are not conducted and hygienic environment aren't maintained throughout the system. Other possible reasons for water quality deterioration are (i) dumping of domestic waste and industrial water into the water bodies without any treatment, (ii) increase in use of chemicals for agricultural purpose, (iii) non-existence of sewage network both in town and villages, (iv) Lack of trained human resources for carrying our low cost designing, implementation, maintenance and sustaining of water treatment system, (vi) Least priority for allocating additional funds for improving water quality/service level which is hindering enforcement of existing Nepal Drinking Water Quality Standard, 2006. In addition, drinking water quality is deteriorated by leakage and rusting of water supply pipelines and presence of sewage pipe nearer to drinking water pipe. Furthermore, there is also very poor awareness among population on

importance of water quality and nonexistence of regulatory framework and responsible institutions for closely monitoring and reporting system.

3. Risk Awareness, Emergency Preparedness and Resilience

Nepal is highly prone to disasters, ranking 16th globally. On a yearly basis schools and communities are affected by hazards such as flooding, landslides or potentially catastrophic earthquakes. At least 28% of the total population of Nepal is exposed to risks from three of more hazards (NSDRM 2009). Children and youth constitute a significant proportion of the population in Nepal. For instance, children make up 43% and 55% of the 27 million people are under 25 years old (UNICEF 2011). The impacts of climate change which are largely intergenerational, will affect children more than adults. Vulnerability is particularly high for public buildings including schools, and is exacerbated by overcrowded classrooms, lack of risk awareness and preparedness plans, and unavailability of critical services. However, there is lack of meaningful participation in climate and disaster risk management since communities perceive children largely as passive recipients of services. Consequently, children are rarely involved in disaster preparedness, response and measures to mitigate climate and disaster risks. Where children have been engaged, the focus has been largely on upper primary students with a significant gap on interventions targeting lower primary students and those learning in early childhood development centres. Consequently, knowledge and awareness on disaster preparedness is very low amongst young children. For instance, less than 18% of children have the correct knowledge and understanding of climate change and its impacts (Plan 2012). It is important to raise awareness amongst children on natural hazards in their area and how they, their schools, and their families can be prepared and respond if a disaster were to happen.

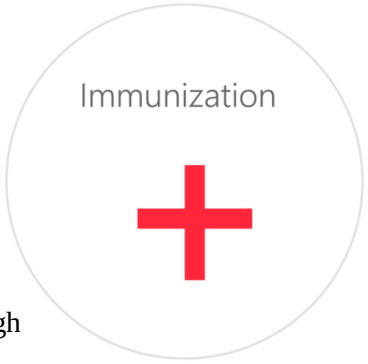
4. Child Marriage

Child marriage is increasingly becoming a priority concern at the global, regional and country levels with growing experience and evidence on causes and consequences of the practice as well as what needs to be done to end it. Although Nepal is a signatory to a number of international charters and covenants that discourage child marriage (e.g. the Universal Declaration of Human Rights, Convention on the Elimination of all Forms of Discrimination Against Women, and the Convention on the Rights of the Child), and have supportive domestic legislation which defines the minimum age of marriage for boys and girls as 20 years without the consent of the parents and 18 years with parental consent, weak enforcement of the laws and patriarchal social norms drive child marriage in Nepal. According to Nepal Demographic Health Survey 2011, 29% of girls aged 15-19 years are currently married and 41% of Nepalese women aged 20-24 years were married before they turned 18 (Nepal Demographic Health Survey 2011). Among the married population aged 20-24 years, around 11% even got married before the age of 15 years old (Nepal Demographic Health Survey Census 2011).

Child marriage is a violation of human rights. The formative research on child marriage conducted by UNICEF in 2014 shows that almost two-thirds of child marriages were decided by a girl's father, which disempower girls and denies their right to choice of when and whom they marry. Child brides are likely to drop out of school and engage in housework choirs. Due to the lack of access to educational or livelihood opportunities, child brides are more likely to remain in poverty. Child marriage makes it difficult for girls to break and escape the cycle of poverty.

Child marriage poses greater risks on health and wellbeing to girls. Child brides face immense pressure to bear children immediately after marriage. Child marriage is the major cause of pregnancies before age 15 (The Global Discussion 2013). Girls who give birth before the age of 15 are five times more likely to die in child birth than girls in their early 20s (The Girls Not Brides). Their children are less likely to live beyond their 1st birthday (The Girls Not Brides). Child brides are more vulnerable to physical, sexual and psychological violence from their husbands, in-laws and other family members (The Girls Not Brides).

5. Child Health



Immunization is considered as one of the most cost-effective health intervention. Immunization has not only reduced the burden of vaccine preventable diseases, but has contributed to achieving the Millennium Development Goal (MDG4) on child mortality reduction. Currently, the Government of Nepal provides vaccination against TB (Vaccine name: BCG), diphtheria-pertussis-tetanus-hepatitis B and haemophilus influenza (DPT-HepB-HiB), poliomyelitis (OPV and IPV) and measles and rubella (MR vaccine) throughout the country and JE (Japanese encephalitis) vaccine in high risk districts through routine immunization.

Age of administration	**Name of vaccine**	**Diseases to protect**
At birth	BCG	tuberculosis
At 6 weeks	DPT-HepB-Hib, OPV, **PCV (new)**	Diphtheria, Pertussis, Tetanus, Hepatitis B, haemophilus influenza, Pneumonia and Polio
At 10 weeks	DPT-HepB-Hib, OPV, **PCV (new)**	
At 14 weeks	DPT-HepB-Hib, OPV, **IPV (new)**	Diphtheria, Pertussis, Tetanus, Hepatitis B, haemophilus influenza, Polio
At 9 months	Measles and Rubella, **PCV (new)**	Measles and Rubella and Pneumonia
At 12 months	JE	Japanese Encephalitis
At 15 months	Measles and Rubella	Measles and Rubella

The routine immunization services are provided through health facilities (fixed clinics), private clinics, NGO or INGO clinics, urban clinics, outreach session and mobile teams in geographically inaccessible areas. All vaccines under national immunization program are provided free of cost.
Despite the strong routine immunization program in Nepal, 10% of children has not still complete full immunization as required by government schedule and 3% of children never get any vaccination. The hidden pocket has remained as a challenge to immunize every children at proper time. Due to multiple doses of vaccinations, mothers or care givers sometimes easily forget to visit health facility to vaccinate their children at the right time. There is also lack of record tracking system to remind and manage the routine immunization schedule for children.

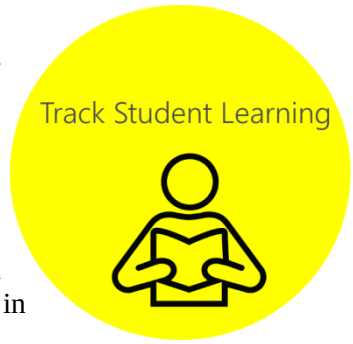
6. Adolescent Health

Adolescents (10-19 years old) account for nearly one fourth (approximately 6.4 million or 24.2%) of Nepal's population. This developmental stage for adolescents marks the critical transition from childhood to adulthood, during which physical, emotional, cognitive and social changes expose adolescents to new health needs and risks. It is also a period when adolescents have great opportunities to gain knowledge on health risks and healthy behaviours that form the foundation for healthy life style and wellbeing in later life as well as for health of future generations. Although

adolescence is the great opportunity to develop knowledge on sexual and reproductive health and rights and acquire healthy behaviour, adolescents have a limited source of accurate information and insufficient spaces to learn and discuss sensitive issues and concerns. According to UNICEF's research on adolescents' concerns on sexual and reproductive health in 2014, adolescents expressed great interests in knowing about their concerns on sexual and reproductive health such as changes in body, menstruation, ejaculation and contraceptive methods.

Due to the limited access to information and private platforms like counselling service on sexual and reproductive health, adolescents often have misunderstanding about their issues and concerns. For example, while 70% of adolescents (aged 15-19) had heard of HIV, only 23% had correct knowledge of transmission (ADAP baseline survey, 2014). The report also pointed out that shy nature, lack of privacy and fear of parents and villagers are the main causes of barriers to access the information and services related to sexual and reproductive health. The inadequate access to necessary information on their health negatively affects the wellbeing of adolescents and ultimately deny adolescents' sexual and reproductive rights.

7. Education : Supporting teachers to track student learning



While progress has been made in recent years in ensuring access to primary education for children in Nepal, further work is still needed to improve quality learning in the classroom. For example, a recent study on early grade reading found that from sample of Grade 2 and 3 students 37% and 19% of students respectively could not read a single word correctly in a passage. The government has introduced a process of continuous assessment, whereby teachers are meant to track individual student learning across multiple subject areas a day. In practice, this is challenging to do in a meaningful way in classrooms in Nepal.

8. Education: Out of School Children

An estimated 560,000 primary and lower secondary aged children (5-12 years old) are not in school in Nepal. Out of school children are children who never enrolled in schools, or those who dropped out. Access to education is hampered by various factors including poverty and consequent child labour, discrimination or marginalisation based on social/ethnic groups or castes, disabilities, lack of parental awareness, gender stereotypes, among others. Of the children who were never in school, 16.6% are from the poorest households, demonstrating the cycle of poverty that can result in lack of access to quality education. While the national enrolment rate is high (over 95% at primary level), there are still marginalized pockets in the Mid- and Far-West and the Terai where it is estimated that there could be as many as 1 in 4 children out of school at the primary level. It is important to show the relation of more years of school completed and the individual learning which is also linked with healthy behaviour.

9. Disability

Persons with disabilities in Nepal encounter many problems as a result of the social and physical environment not being disabled-friendly. Some of the key problems are:

- Limited or no physical access of persons with disabilities to public buildings like hospitals, schools and shopping malls, public transport, etc.
- Limited or no access to educational facilities like braille books, adapted sports opportunities,

- Lack of assistive technologies in mobility impairments, communication impairments, hearing impairments, and visual impairments.
- Children with autism and intellectual disability often encounter the following issues:
    - Difficulty in maintaining eye contact
    - Difficulty in practicing social skills
    - Difficulty in hand-eye coordination
- Difficulty accessing information as a result of hearing or visual impairments
- Persons with disability often suffer from low self-esteem and self-efficacy
- Many forms of intellectual disabilities cause children to have difficulty in learning languages/mathematics
- Children who suffer from Attention Deficit Disorder (ADD) cannot focus on a certain task or work for long.
- Persons with disabilities encounter difficulty finding and maintaining Employment

10. Open Problem Statement

This category is open for any other ideas beyond the problems mentioned above, that can capture major problems prevailing in the society still waiting to be solved.

Outreach

1. Ideathon

Ideathon was a brainstorming session open to public to crowd source innovative game ideas that can be developed that will be beneficiary for children. The main purpose of this session was to create an idea with a basic proof of concept with a rough user interface designs. Titled 'Child Ideathon,' 2 sessions were provided on March 12th and March 23rd, 2015. Over 100 participants participated in the creative race of coming up with innovative ideas for the children of Nepal.

2
Ideathon

100+
Ideas

2. Boot Camps

Child Gameathon boot camps were organized for the interested participants to learn how to develop games in 3-4 days. Led by MIC, the free training sessions gave students the opportunity to gain knowledge of practical skills on game development built on Microsoft's platform. The skills learned at the camp were to be used to develop games in Gameathon. Domain experts from UNICEF also attended every camp to elaborate more on each problem statement. This was to give students more data on each problem, interact with them, as well as to help students to understand the problems at a deeper level. Total 5 boot camps were conducted with exposure to about 207 participants.

- First Boot Camp: March 25-26, 2015
- Second: March 29-30, 2015
- Third: April 2-3, 2015
- Fourth: April 5-6, 2015
- Fifth: April 8-9, 2015

Students learn game developing skills / © Sonika Manandhar/2015

5
Camps

150+
participants

UNICEF domain expert presents on problem statements /
© Sonika Manandhar/2015

3. College Roadshows

Child Gameathon roadshow was a series of outreach events conducted at different IT colleges in the Kathmandu Valley. During February through March, total 15 roadshows were conducted attended by over 703 participants. The event not only promoted about the opportunity to participate in Child Gameathon, but also a time to educate students about the pressing issues regarding children. Time was also allotted for UNICEF domain experts to present and discuss about the problem statements, as well as to motivate students to try solving these problems through innovative game ideas.

15 Roadshows

703+ participants

College	Participants
National College of Engineering	26
Kantipur Engineering College	50+
Prime College	50+
Softwarica College	25
New Summit College	45+
Texas International College	60+
MSP 2015 Meeting	-
Kathmandu Bernhardt College	60+
Academia International College	50+
Asian College of Higher Studies	47
MSP Alumni	60+
St. Lawrence College	60+
Nagarjuna College	60+
Volunteers for We Speak Code	60+
National Infotech College	50+

ChildApp Roadshow at Prime College/ © Sonika Manandhar/ 2015

ChildApp Roadshow at Bernhardt College/ © Sonika Manandhar/ 2015

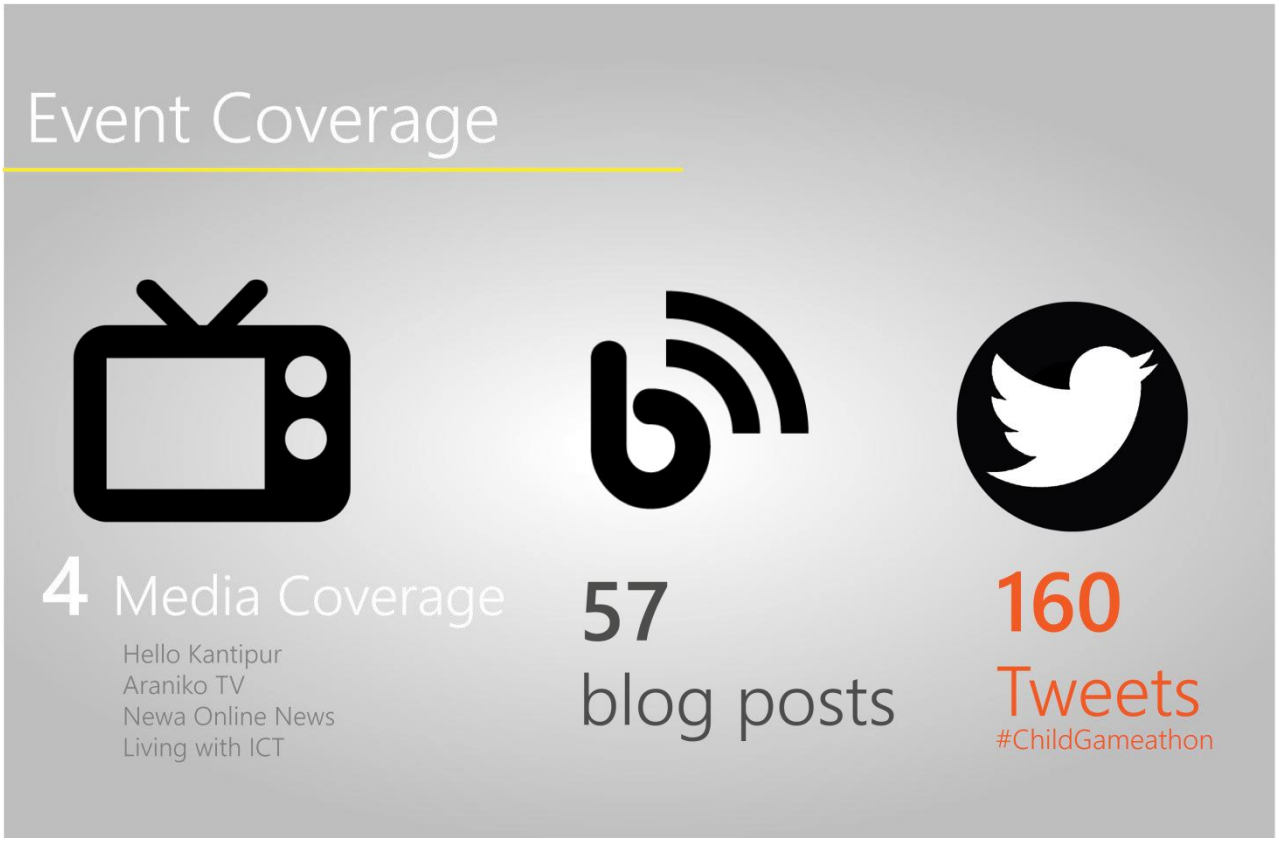
4. Facebook

Corporate Facebook pages of MIC Nepal and UNICEF Nepal were actively used to cover real-time activities related to Child Gameathon.

"We found about the Gameathon through Facebook. We had attended the Child App competition before and Gameathon seemed like an interesting idea. The event has been amazing and as we had expected. We would like to extend the project even further for other social issues after this Gameathon."

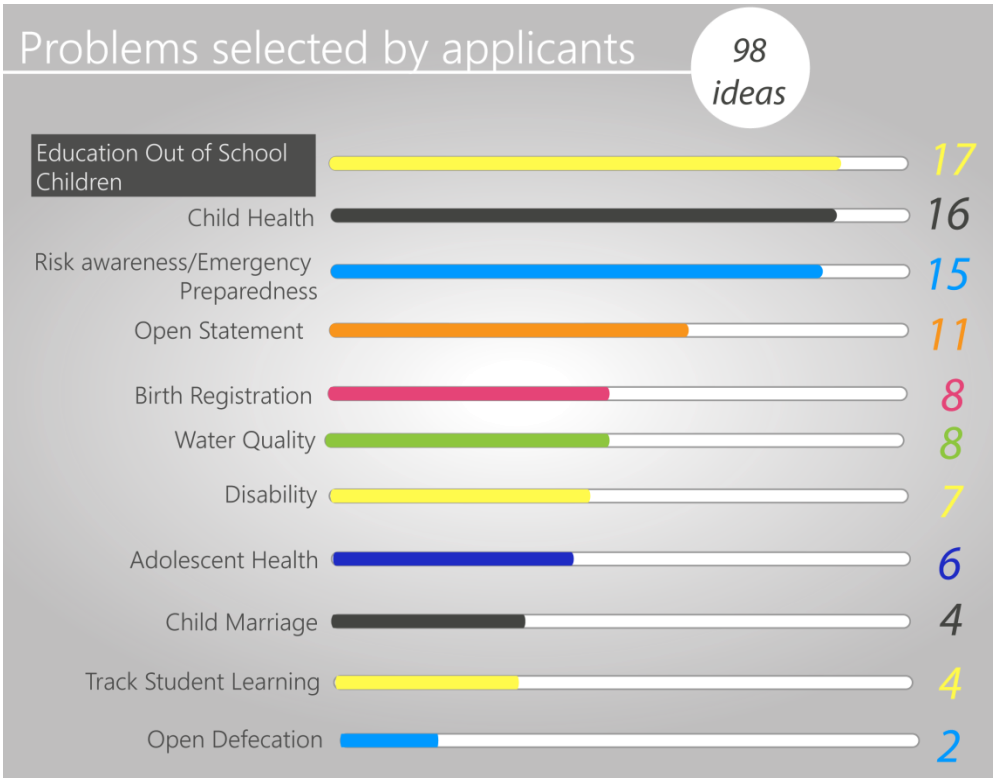
-Team Octavian
(3rd place winner, Child Gameathon)

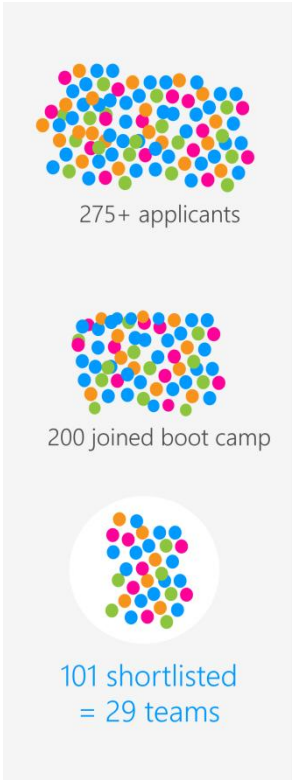
Team Octavian at Child Gameathon/ © MIC Nepal/ 2015



Shortlisting

Over 275 individual applicants into 74 teams registered to compete in the Child Gameathon. Of this pool, 101 individuals in 29 teams from 20 different colleges were shortlisted. The problem statements that received most attention by the applicants were child health, and education.





Open Statements some applicants identified as other problems to tackle:

- Canvas (free hand platform)
- Child labor, child nutrition, and social etiquette
- Cleanliness
- Sanitation, attention deficit, and environment protection
- Child labor and women health related to pregnancy
- Sanitation
- Sanitation and health
- Entertainment
- Recycling wastes
- Open world game

Shortlisted Participants learn issues first-hand

In order to give teams more exposure and in-depth understanding of the problems they wish to solve, all the shortlisted participants of Child Gameathon visited the local school and primary health care center in Panchkhal in Kavre district before the competition. The teams were expected to meet and

talk with the residents, discover their problems, and think of how they find solutions to their problems through developing game applications.

Participants first visited the Shree Sarba Mangala Higher Secondary School. Meeting the Principal, Damodar Adhikari, students learned about the major problems prevailing in rural schools. Some problems he mentioned were students moving to cities resulting in unequal gender ratio, students missing classes for months to help parents' work, and also the communication gap between students and parents due to mobile phones. Next destination was Kavre Primary Health Center (PHC) to hear on health issues in the rural areas. Developers met with Narayan Krishna Shrestha, Senior AHM Officer. Some problems faced at PHC were lack of medical equipment, lack of types of drugs, and malaria. Most common problems among children were diarrhea, pneumonia, malnutrition and measles. Shrestha added that internet has helped in spreading awareness to another level in reaching the beneficiaries.

Child Gameathon developers visit Kavre district/ © MIC Nepal/2015

Gameathon developers meet with local school personnel/ © MIC Nepal/2015

The **29** teams shortlisted

Team	Area	Solution Name	Description
Zero	Risk Awareness/ Emergency Preparedness	Mission Possible	Assuming children lack awareness on knowledge and dealing with natural disasters, this game gives the virtual experience to educate them. Different situations will be given to know how they react in each situation & reward them according to their actions
Tech. Sastra	Child labor, child nutrition, and social etiquette	Moomin Kancha	Each level puts on new challenges which will help teach children about different problems and teach them the solution. Since Moomin character is favorite and famous among every Nepalese, we will be teaching children through this character.
Denim	Education	Virtual World	We will develop a game where users not only know to manage time but also learn to tackle difficulties and emergency situation. We will create a virtual world which allows the user to go to library, playground etc. The progress bar will increase if the student can manage their time properly.
Soulmaintain	Sanitation, attention deficit, environment protection	'Mero Pathsala'	This is a role playing game with an open world environment of a school. It follows a storyline where the player, a newly admitted school student, roams around the school premises, performs various tasks that allows his stats to increase or decrease based on his actions in the game.
Creative Eye	Child Marriage		By playing this game a child can learn about the demerits of child marriage and the problems and consequences associated with it. Main objective is to give the message to the player that early marriage is scary and will not benefit in their personal life.
Enigma (1st place winner)	Nutrition	Healthy-I	Game to solve on-going children health issues. Since children are very attracted towards junk food instead of healthy food, we are trying to solve this problem with the help of our game “Healthy-I.” "When children plays this game they will know which foods are good and which are bad for health.
Karuwa Apps	Education	Numeral Knights	We are trying to make learning mathematics fun, motivate children to solve complex problems and make them comfortable with math. This game also deals with complex problem solving, logical thinking and will make students confident with math.
Prakop	Risk Awareness/ Emergency Preparedness	Disaster Survival	Player will be informed about the type of disaster and the survival kits required. When game starts, there will be survival kits on the way. If collected and rightly used, player survives and levels up. Otherwise player dies and message describing how she died pops up.
Caicas	Risk Awareness	CS1 (Child Stimulator One)	Game that stimulates child activity starting from birth to primary level education. This game helps in acknowledging parents after child birth process and importance of this process for the future of the child both physically and educationally.
Imagination	Health	Save the world	Adventurous game having mission to do jobs for child welfare. Player have mission such as immunization camp and have to complete for earn points.
"SID"	Health - Immunization	"Hamro Bato"	In the game, character named SID runs to survive. He has to get all the vaccines required to survive. If he fails to get the vaccines then he gets infected by the specific disease and dies and game halts. A message

			pops up describing the cause of death and the causative agent.
Chi-fu	Health - Immunization	Eklak	The idea is like a temple run. Here the player deals about the vaccination program of the child and the coin earned in game will be donated for the help of child education and health. The time will be limited for player to gather the vaccines for the vaccination program and the proper health of the child.
CAB-Juggernauts	Risk Awareness/ Emergency Preparedness	PlaySafe	"PlaySafe" will give an adventurous gaming experience with knowledge of doing things in a right way plus knowing about how to be safe from different natural and artificial hazards.
SiMiAans	Health	Duty Calls	Game spreads the awareness and prevention methods on different health hazards. The main character of this game is a 'Doctor'. In this game there is a village with lack of health education, with most people suffering from water and air borne diseases. The Doctor is assigned from a city to that village to eliminate all the health hazards and spread awareness.
Elite xp	Education - support teachers to track students	ykm soln	Game helps to prepare and tackle different hazards/obstacles during disasters or injury by collecting different items needed for self preparedness. First stage is before disaster where the user needs to prepare for the disaster by collecting items needed like dry food, torch light, go bag, first aid. If they are unable to collect all items the game will be over. If they are able to collect they will proceed to next stage.
Bnikesh	Environment, Risk awareness, Waste management	SafaClean	It is a very simple & fun game which even children of young age can play. It demonstrates the importance of cleanliness and its impact on child health as well as the whole society.
Deceptiorid	Water quality	Save Water	Game is based on the concept that the player has to search the taps around the village to close it so that they can save the water from going to waste within a specified period of time.
Positive Energy	Water Quality	Aquafact	Game will bring awareness about the water pollution and encourage child and others to drink pure water. We provide two different water bottles with pure and polluted water in game. The game levels up if only pure water is being drunk. Otherwise the character dies with water borne diseases.
Hraswo	Disability	The Blind Shooter	A windows phone based audio game that uses 3D sound positioning and mobile accelerometer to allow visually impaired people to play an immersive shooting game based on audio clues using smartphone as a virtual gun. They can shoot at the approaching sound. Since visually impaired people don't get enough chance to interact with modern technology, we find it rare to have computer games entertaining them. This game will sharpen their senses and let them imagine the things what other people usually see on their screens, thus empowering them and serving to their unfulfilled desires
Creatu Developers (2nd place winner)	Canvas (free hand drawing and writing)	e-play	We are developing platform for child's individual skill development through canvas (i.e free hand drawing and writing), structural drawing with lego , basic learning for mathematics and alpahabetics using

			interactive gaming interface.
Kantipur	Risk Awareness/ Emergency Preparedness	Sankat Mochak	The game consists of three modules. First is for kit preparation where the user learns what tools are necessary for particular disaster. The second module simulates the natural disaster environment and the player has to save himself from the disaster. Third module is about saving the life of the victims. Player has to use specific tools for solving the specific problem like using first aid kit for the injured.
Akshyar	Sanitation and health	Asepsis	In the game, an environment appears and there is a bucket filled with degradable and non-degradable things. A catapult is provided through which those elements that includes rotten apple, dust, bottle, books etc. The degradable ones are thrown in one bucket while the non- degradable ones are thrown in the other.
BARR	Education	AlphaShooter	This game is built to give children vocabulary lessons and entertain them at same time. Game has a shooter that targets alphabets flying on a wall. A shooter will be provided objects or words and blank space to fill the respective name. A shooter should shoot alphabets in correct order with in certain time to gain points.
PSBS	Education	Raching Characters	The main objective is to collect the alphabets or numbers as the necessity or mission. This game is targeted to children with difficulty in understanding the characters i.e. alphabets, numbers and words.
Octavian (3rd place winner)	Child protection - girl trafficking	Learning Technology	3D interactive game about raising awareness in girl trafficking. It has various features. There will be story telling while game progress about girls trafficking. To progress to the next level one needs to answer the question asked based on the story. Another feature requires one to defeat a certain enemy to progress to next level. This game is more suitable for ages 8-14.
1 Man Army	Education	Solve my problem	This game focuses on child education but other child problems are also considered. In this game there is not just one game but multiple types of games. The games are being developed in 2D and 3D.
Social Drive	Child protection	Nepal Sambaadh	Game is an online application to bring together the needy(victims of child marriage\child abuse\child labour etc), eye witness(of various problems in society like open defecation, someone being victimised etc) and the experts (NGOs\ Police\ Doctors\Health Experts) in a common platform. If I see someone defecating in open, I can send a report immediately and concerned people will plan of arranging toilets in that area.
Hustle	Health	Germ KIll: Defend Your Human	What the game will be trying to show is the use of various health facilities that will help to maintain human health. Game is about killing the germs in the human body. The main character/ hero will be a micro-organism hero running around inside the human body killing germs in the way and protecting the human from various ailments such as fever, malaria, tooth decay, stomach ache, etc.
Kite Learners	Education	Playmate	It is entertaining gaming zone where child learns how to help themselves and others with the basic first aid treatment. There are different levels in the game.

Program Sketch

Child Gameathon was held April 17th to April 19th, 2015 as a 54 hours race at Dhulikhel Lodge Resort in Dhulikhel, Nepal. 101 developers came together as 29 teams and participated in the 2 nights, 3 days race to take the challenge in developing a working game prototype within the limited time.

April 17 (Day 1)

"The important part is to solve the problems in the community through the help of these devices."

- Allen Bailochan Tuladhar, Country Director, MIC Nepal

Inauguration Ceremony

Child Gameathon was inaugurated with a welcoming speech by MIC Nepal Country Director, Allen Bailochan Tuladhar. Allen emphasized that innovation is key to the development of Nepal and stated, "The important part is to solve the problems in the community through the help of these devices and the application and games developed for these communities," and added by leaving the remark "**bring it from lab to land**." The challenge lies in not only developing a fun game, but a game that can actually be implemented in schools in rural villages. Following Allen, Ani Choying Drolma, National Goodwill Ambassador of UNICEF Nepal and the 'singing nun' took stage. Ani shared her belief that one should do good deeds towards one another and what the participants were developing at Gameathon was giving what they know to the people needed in Nepal. After blessing the ceremony with her song, final speaker, Tomoo Hozumi, Country Representative of UNICEF gave speech. He mentioned that "We in UNICEF believe that learning should be fun and not a dreading task. Games can be used in most effective ways. Youngsters trying to help the young child in solving their problems, this is how Nepal will develop. We at UNICEF are committed to help and support you hand-in-hand." The ceremony ended with the formal inauguration of the Gameathon with a lamp lighting ceremony by Allen Bailochan Tuladhar, Ani Choying Drolma, and Tomoo Hozumi.

Child Gameathon opening ceremony / © MIC Nepal/ 2015

Program Briefing

Following the inauguration ceremony, an introduction session was in place where teams introduced themselves using creative ways such as dancing, acting, and singing. The entertainment in the room loosened everyone before they delved into relentless hours of developing for the next two days.

Solution Development

Once everyone was briefed on rules and schedule, the race started and the 29 teams split across the event venue and went straight to work.

INNOVATION FROM HIGH SCHOOLERS

Interview with
Team Karuwa Apps

Bikalpa Ghimire
Gopal Chitaure

Solution Name: Numeral Knights

Child Gameathon was open to all ages and social background. Bikalpa and Gopal were the youngest participants to compete in the race. They are not only friends, but recent high school graduates who previously attended the ChildApp Appathon together in 2014 while in school and returned for another lap of fun competition after they graduated from school this year.

The two have always been gamers. It was their passion in games that brought them back to Gameathon. "Games take away the psychological stress," mentioned Gopal. The fun factor in games drived them to come up with a creative game idea that can be enjoyed by many children in Nepal. At the Gameathon, the youngsters were developing a game that makes mathetmatics easier and more fun. This game can help children improve on mathematical calculations and problem solving. Their focus in the Gameathon was not about winning, it was about completing their product within the limited time.

"Games are the best medium to solve problem. Parents need to be encouraged to let their child paly even more games."

The two developers want to make "Karuwa Apps" as a startup foundation that will be a platform for upcoming game developers. When asked which field they will likely be pursuing for further studies, Bikalpa was thinking Zoology and Gopal psychology.

GIRLS MAKE DIFFERENCE WITH TECHNOLOGY

Interview with
Team Kite Learners

Samikshya Maharjan
Sarmistha Das
Sushma Shrestha
Asmita Shrestha

Solution Name: Playmate

Eeach year there is an increasing number of girls participating in technology driven competitions like ChildApp Appathon and Child Gameathon. This positive change gives a statement that girls are capable to make a difference in the development of the country. Female participants have set a prime example that girls, like boys, are fully capable in changing the society by contributing their technical knowledge.

A team of four girls participated in this Gameathon. They put their minds and passions together to help solve issues in child health. Samikshya Maharjan, the team leader of "Kite Learners," shared her experience when forming her team.

"When we heard about Gameathon we got really excited and thought to participate. As everyone of us was good in some or other fields, we decided to form a team. We are proud to be the only team with all girl participants."

April 18 (Day 2)

Gameathon entered day two from midnight and yet a quarter of the participants were still up planning and developing.

When the hall closed 1:00am, some called it a night and went to bed, but still some decided to continue developing. Morning came and a new day was about to begin. The day was planned for meeting with mentors, some entertainment, and pitch rehearsals. Before teams met with mentors, teams were briefed on the judging criteria for the pitching day. Teams were to be evaluated on their solution concept, fun value, learning value, concreteness of the idea, its feasibility, and so on.

Teams developing games / © MIC Nepal/ 2015


Teams working late in the night at Gameathon / © MIC Nepal/ 2015

Meeting the Mentors

Mentors for the competition were formed of 30 domain and technical experts from UNICEF, development sector, IT sector, and private sector. Mentors were to be paired with each team and assist them on their respective expertise. They volunteered to dedicate time and knowledge in coaching the participants to develop solutions that are feasible yet creative. The selected mentors arrived 10:00am excited to meet with teams. There were also little mentors of age ten and under, the age group for whom the games were developed for. They visited teams and had good conversations with the participants.

Entertainment Time

After another day of full-fledged development race, the organizers planned a one hour of evening entertainment to the participants where they can shake off the tension and relax. Everyone gathered in garden and enjoyed good food and live music from singer Anju Pant. Participants had nothing but fun during this hour.

MEET THE MENTORS

Little mentors
Avishi Pant (10) & Sarasi Khadka (7)

Little mentors Avishi and Sarasi went from table to table talking with the teams. When asked by a team on how to respond during an earthquake, Avisihi answered they should hide under the table or bed. *"If both aren't available, we should go outside of our house," - Avisihi*
When the two girls visited a team developing a game on first aid, the two defined first aid as the immediate attention given to the parents.

Technical mentor
Raju Maharjan, IT Manager at ICT System, UNICEF

Raju went from one team after another guiding and motiviating them to complete their game applications. He advised that teams need to study the market first and that their solutions will be sought after if they make the right product. For example, if students understand their audience are from the rural areas and may be illiterate, then they can pinpoint the issue and meet the objectives of the event.

Technical mentor
Rajendra Man Banepali, UN Information Center

Once a computer science and engineering student himself, Rajendra sees technology should be taken side by side to support the needs of the society. On asking what encouraged him to be a mentor, he said the satisfaction he gets by supporting the youth through technology was the reason. Rajnedra suggested the participants to focus on the social problems and use it for their game development.

Photo credit: Child Gameathon/©MIC Nepal/2015

April 19 (Final Day)

The first 48 hours of the competition passed behind them and the grand pitching day arrived when the clock struck midnight.

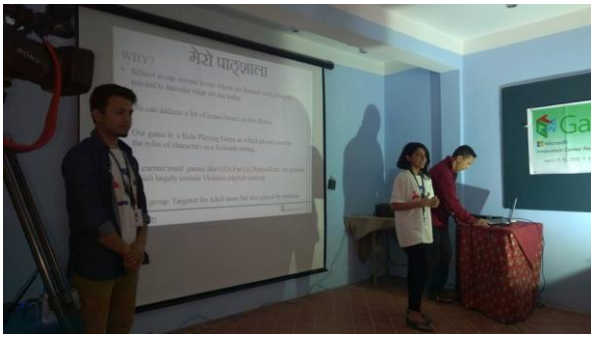
All developers were rushing to get their games completed and occupied practicing pitch rehearsals. The winners from Gameathon would be taking trophies, cash prize, and the top 5 finalists to get intensive training from MIC Nepal to make their game better and take to market. Morning came, and so did the judges for the pitch. Pitching of the game prototypes started from 10:00am and continued until the afternoon.

Trophies for the winners of Gameathon / © MIC Nepal/ 2015

The Final Pitch

The jury panel was seated in the pitching room and briefed on the judging criteria. Both the jury and teams were excited and nervous for the long awaited moment.

Allen Bailochan Tuladhar briefing judges / © MIC Nepal/ 2015



Team Soulmaintain presents on their game / © MIC Nepal/ 2015

Closing Ceremony & Announcement of Winners

A closing ceremony was organized marking the end of the competition. It was the moment to celebrate the two and a half day's of hard work for all participants and to announce the winners of Child Gameathon. Rownak Khan, UNICEF Deputy Representative in Nepal, congratulated everyone for their remarkable work and delivered an inspirational speech addressing that all were winners, and there are no losers. She emphasized that everyone should be proud of their innovative achievements made in the competition, which can enrich the education quality for Nepalese children.

Three teams were awarded with first, second and third among the 29 teams. The top 3 teams will receive cash prizes of NRs. 2,00,000, 1,00,000 and 50,000 as the first, second, and third prize respectively.Team Engima of Softwarica College won first place. Their game, Healthy-I is a game easy to play and one that helps children learn about healthy food. "Since children are very attracted towards junk food instead of health food, we are trying to solve this problem with the help of our game," stated the team lader Bhuwan Acharya. Creatu Developers of National College of Engineering won second place. The team developed a motion-sensing game that enhances children's creativity. Finally, third place went to "Octavian" comprising of students form Kantipur Engineering College for the team's three-dimensional interactive game about girl trafficking.

1st place winner, Team 'Enigma' - Bhuwan Acharya, Amrit Sapkota, Basanta BK, Ankur Lamichhane/ © MIC Nepal/ 2015

2nd place winner, Team 'Creatu' - Raju Shrestha, Mohan Singh Thagunna, Rabi Shrestha, Nishesh Tamrakar / © MIC Nepal/ 2015

3rd place winner, Team 'Octavian' - Sangnam Shrestha, Amir GC, Sunil Lama/ © MIC Nepal/ 2015

All three winners, along with four other top performed teams will receive 3 months of intensive training at MIC Nepal to help them finalize, perfect and scale up their game applications into sustainable business solutions.

Every team was awarded with a certificate of participation of the Child Gameathon. The event ended on a positive note, fulfilling its aim to develop innovative and fun web, mobile and desktop game applications that improve children's learning.

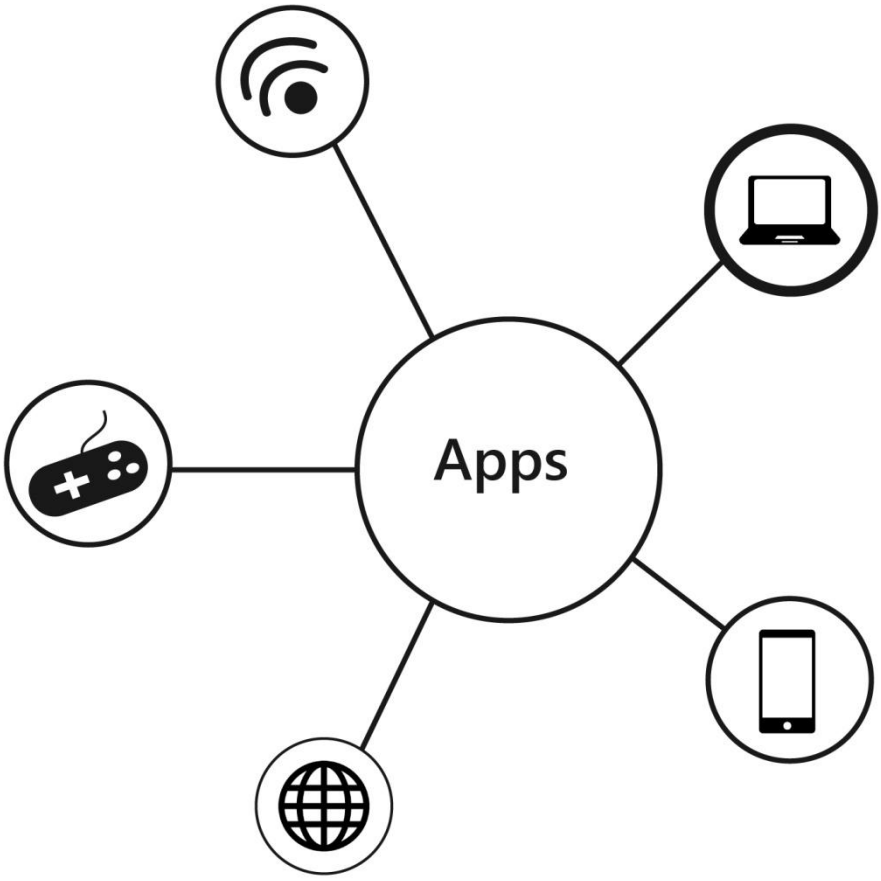
Participants at the Closing Ceremony waving their certifications/ © MIC Nepal/ 2015

Group shot at the Closing Cermeony/ © MIC Nepal/ 2015

02

ChildApp Appathon

"Innovating by Developing"

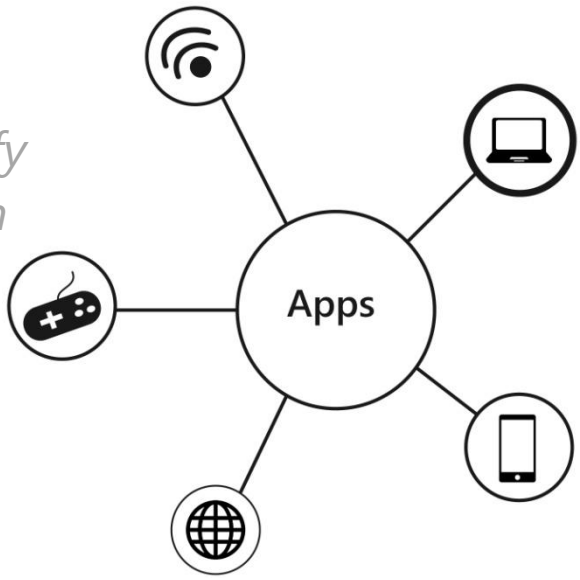


ChildApp

Snapshot

Event	**ChildApp,** Innovative Solutions for Children
Event Period	June 27th - 29th, 2014
Location	Kathmandu, Nepal
Who	Developers, programmers based in Nepal capable to build and design applications
What	UNICEF Nepal, Microsoft Innovation Center, and Childreach Nepal partnered to organize an Appathon to find homegrown technology-based solutions for the common issues related to children in Nepal such as birth registration, child marriage, and child protection.
Objectives	1. Crowd source innovative technology that is homegrown and applicable to the complexity of Nepal 2. Empower young developers to contribute their talents meaningfully for a better Nepal
Timeline	April 15, 2014 — Partnership formed April 20, 2014 — Event conceptualized May 1, 2014 — Promotion started May 15, 2014 — Presentation to stakeholders June 27-29, 2014 — Grand Appathon Aug 15-Sept 15, 2014 — Mentorship at KUSOM Idea studio (Business innovation incubator) Sept-Dec 2014 — Pitch app and business model on national TV Onwards — Connect with UNICEF sections for further possibilities to scale
Results	560 applicants applied to participate in the Appathon. 29 teams (100 applicants) were shortlisted to compete in the race. From the 3 days race, 5 teams were selected in the top 5 finalist category, and among them 1st, 2nd, 3rd place winners were awarded. 1st place went to 'Engineering ADDA' team with application on real-time water testing, 2nd was 'Etechneers' with education application on interactive and virtual learning, and 3rd place went to 'Rising Coders' with application on data collection and birth registration using both SMS/web technology. Finalists and participated teams went on developing and finalizing their apps after the competition and some went live on Microsoft online shop, and some teams were invited to present their works to UNICEF, embassies, etc. More details covered in this section.

ChildApp was organized to identify common issues related to children and help solve them through technology



Concept

UNICEF Nepal Country Office, Microsoft Innovation Center Nepal, and Childreach Nepal collaborated in a partnership to identify the common issues related to children and help solve these issues through technology in the form of an appathon. Appathon is a type of competition where people excited about programming come together for a limited time (usually 24 hours to 72 hours) and collaborate to build a new application to solve an existing problem. Entrepreneurs, designers, students, and developers work in teams of up to three to four members to create web or mobile applications called "apps."

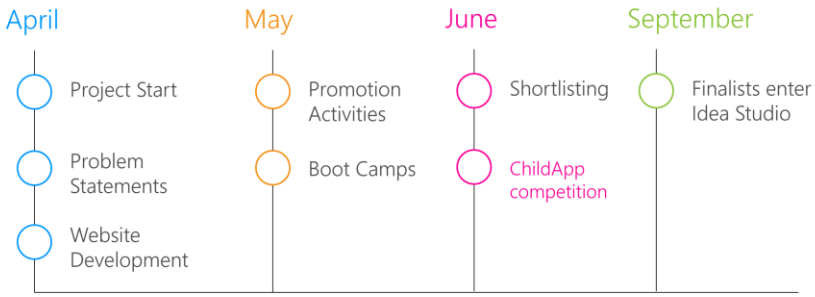
ChildApp was initiated targeting the young technology crowd to develop innovative web, phone, desktop and game applications that can solve common problems related to children's issues in Nepal such as birth registration, child marriage, vaccination, early childhood development, emergency risks, and more. The event aimed to crowd source innovative technology that is homegrown and applicable to the complexity of Nepal. Initial step was to organize an appathon where developers, designers, project managers and programmers come together for a given time of 54 hours to build prototypes of the innovative web or mobile applications that can be later implemented as working, sustainable solutions. The initiative hoped to further empower young developers to contribute their talents meaningfully for the better Nepal.

Process

ChildApp was designed as a thematic appathon. Themes were based on the selected problem statements in various sectors. Developers, designers, programmers and technical people team up and compete against each other in an energetic race of programming to develop innovative applications that provides possible low cost and scalable technology. The Appathon targeted for participants to join in a 54 hours race to develop their solutions to develop best solution for children. ChildApp was planned to be residential, 3 days and 2 nights. In the Award Ceremony, the first place winner team was to receive Nrs. 100,000 second place winner team Nrs. 50,000 and the third place winner team Nrs.10,000 as a reward for developing the best solutions. The best solution will be selected by the panel of judges on the basis of pitching and demos of the solution/prototypes that each team developed at ChildApp.

Program Flow

ChildApp project launched April 20th, 2014. During the 3 months of activities leading to the grand appathon, UNICEF played primary role providing domain expertise and Microsoft took lead with technical expertise.

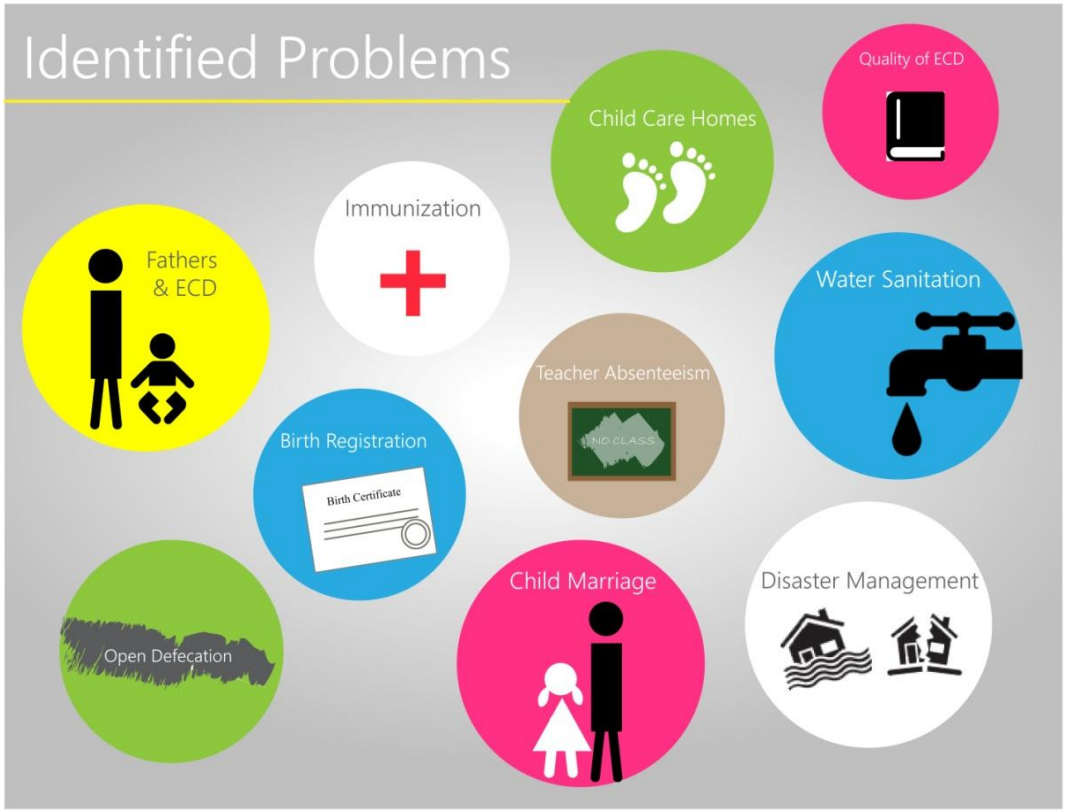


Brainstorming

As a start, UNICEF looked into the pressing problems around children in Nepal. An internal consultation session with the UNICEF Nepal program sections was conducted. Meeting objective was to receive insights on the first appathon attempted at UNICEF Nepal. Discussions also followed on the types of problems to be addressed which can be dealt with a technology-based solution. Each program section was requested to propose a problem pertaining to their field and the needful solutions. Problem had to be an existing problem and the bottlenecks to development.

Problem Statements

Each UNICEF Program Section was encouraged to identify and prepare a problem statement for ChildApp; a problem that is a bottleneck to the development in Nepal related to children, and one that can be enhanced with technology. 10 problem statements were submitted by the Program Sections. In addition, an open statement was offered to the participants where applicants can propose other problems they see as more critical to Nepal.



1. Birth Registration

Problem:

Registration of a child's birth is a critical first step towards safeguarding lifelong protection. For birth registration to be complete, birth reporting is a mandatory prerequisite. Without it, birth certificate cannot be granted. Birth reporting in Nepal follows a manual recording process of collecting basic information like child's name, date of birth, age and parent's name. Not surprisingly, births are not properly reported to the Village Development Committee (VDC) secretaries. Lack of birth reporting channel, especially among home deliveries in remote communities, is a nationally acknowledged problem. This situation adds pressure to the Government and VDC in planning for the delivery of basic services (e.g. immunization, child grant in Kernali districts etc.) as well as resource mobilization and budgetary allocation. Further, birth reporting can provide a powerful monitoring tool that helps to identify the number of birth in a certain period of time and compare with the number of birth registered officially. If there is a wide gap between the two, the VDC will be easily pinpointed and the secretary will be pressured to act.

The Nepal Demographic Health Survey (NDHS) survey showed that only 42.3 percent of children under the age of 5 in Nepal have their birth registered. The impact of the lack of a birth certificate on the individual cannot be underestimated; it is a passport to protection and is required to access an increasingly wide range of services, entitlements and opportunities. Children who are not registered are excluded from many of the benefits of citizenship. A birth certificate can help to protect children from situations of exploitation and violence, such as child marriage and child labor, and achieve convictions against those who have abused a child.

Need:

Recent trends in the international environment provide opportunities for rethinking approaches to promote birth reporting / birth registration. Innovative measures to bring civil registration services to people have been evolving through the use of the newly-made available technologies. Such technologies simplify birth reporting procedure and deliver transparency, accuracy, record-keeping process, and efficiency. For example, electronic records and storage can replace paper-based records, and the use of mobile phone technology in remote rural areas needs to be further exploited. In fact, mobile penetration was at 71% in 2013, and smartphones have increased their market share annually by 20~25%. Internet penetration was 26% in 2013.[1]

2. Water Testing

Problem:

While 85% of households in Nepal have access to safe drinking water (Nepal MDG – Progress Report), there is little control of the quality of water delivered. A survey conducted by the Environment and Public Health Organization in 2010 of water quality found that 65.5% of urban and 93.7% of rural sources of piped drinking water, usually considered the safest source of water, were contaminated by faecal coliform bacteria (Environmental and Public Health Organization).

The need to better control water quality in Nepal is constrained by two principal factors. First, there is lack of trained professionals that have the equipment and are able to conduct basic water quality tests (turbidity, ph levels, temperature and faecal coliform bacteria presence), and second there is the absence of a central database to store and collect these

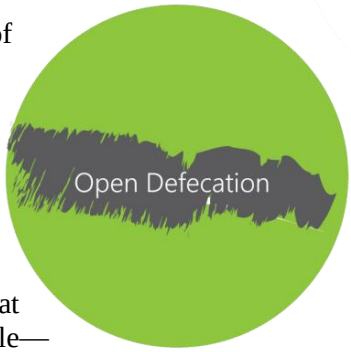
[1] UNESCO. Assessment of Media Development in Nepal 2013

water quality tests. Finally, there is no way to translate water quality information into actionable data to proactively respond to water quality crises and potential outbreaks. The biggest issue in data collection is a regular monitoring and timely information dissemination.

Need:
New application could be used to collect data of water quality in real time monitoring and identify potential poor water quality outbreaks.

3. Open Defecation

Problem:



The culture of open defecation in Terai district is widely accepted because of bordering country India where 52% of the world's population openly defecate. 26 million people in Nepal have access to toilets. However, 9 million people, 40% of the population, still don't have access, according to World Bank's report. In parts of the *Terai* or lowland areas, this number goes up to 75%. Government of Nepal has achieved remarkable progress in improving sanitation coverage in the last two decades. In 1990, only 6% of Nepalese had access to a toilet. By 2011, 62% had access, with the sanitation Millennium Development Goal (MDG) achieved ahead of the 2015 target. However, that achievement still leaves a large population—more than nine million people—without toilets. So the Government decided to aim for a new and more ambitious target—universal access by 2017.

Need:
Terai is the most vulnerable area of open defecation practices in Nepal. An application could be used to verify pre and post open defecation certification in Terai which will improve the government's monitoring system of pre and post open defecation declaration in Village Development Committees.

Examples can be SMS surveying tools: frontline SMS, GeoPoll, etc. One verification would be to reach household through child clubs and they will enter data on household toilets using proxy indicators, to see whether toilets have odor and look used. Take a picture with Geographic Information System (GIS) installed mobile phone. GIS installed phones will automatically record date, time and location of household toilets and send data to the Water, Sanity, and Hygiene (WASH) Coordination Committee (Village, District, and Municipality) and even create a map of toilets in Terai districts.

4. Children residing in Child Care Homes

The Central Child Welfare Board (CCWB) estimates that 15,215 children live in 797 registered child care homes (CCHs) in Nepal. CCHs are often referred to as orphanages however it is estimated that at least 85 per cent of children residing in these homes have at least one living parent (UNICEF-TdH 2008). Further, it is well established that staying in a CCH can have detrimental effects on children such as being more likely to suffer from poor physical health, reduced intellectual capability and social and behavioral problems compared to children raised at home or in foster care (Browne 2009). It has been recognized that a family environment is the best place for a child to grow up and policy initiatives of the Government of Nepal reflect this. To date CCHs have often been the only alternative to parental care and efforts now need to be made to place children residing in CCHs in the care of families. To do this comprehensive data on children residing in CCHs needs to be collected.

Problem:
The CCWB collects data annually on the number of children residing in registered CCHs. As mentioned above there are 797 registered CCHs in Nepal however of the 422 that are located in the Kathmandu Valley, data has only been collected from 181. This is largely due to lack of resource and comprehensive data collection system. In addition, detailed information on children residing in homes is not available. This information is necessary in order to monitor and assess the situation of children residing in homes and to prioritize children for placement with families. Further, the CCWB have expressed an interest in strengthening their data collection systems however they need support in this regard.

Need:
It is important that data collection systems are improved to collect the following information from children residing in residential care homes:

Date of entry to home; who placed the child in care; why the child was placed in care; gender; age; level of education; parental status (single orphan, double orphan etc.); HIV infected or affected (CABA); disability status; district of origin; ethnic background; health status (affected by disease, stunting, etc); conflict affected; birth registration

Data should be collected about children already in care and children entering care. In addition, there is no central list of CCHs registered with the government. Technology may also be used to collect details of CCHs renewing their registration each year so a centralized list can be maintained. Any data collected needs to be automatically populated and stored in a central database for access by CCWB staff. The CCWB does not have the capacity to input data collected into a database.

5. Children and Risk Awareness

Problem:


Children and youth constitute a significant proportion of the population in Nepal. For instance, children make up 43% and 55% of the 27 million people are under 25 years old (UNICEF 2011). The impacts of climate change which are largely intergenerational, will affect children more than adults. However, there is lack of meaningful participation in climate and disaster risk management since communities perceive children largely as passive recipients of services. Consequently, children are rarely involved in disaster preparedness, response and measures to mitigate climate and disaster risks. Where children have been engaged, the focus has been largely on upper primary students with a significant gap on interventions targeting lower primary students and those learning in early childhood development centers. Consequently, knowledge and awareness on disaster preparedness is very low amongst young children. For instance, less than 18% of children have the correct knowledge and understanding of climate change and its impacts (Plan 2012).

Need:
In order to create knowledge and risk awareness amongst students necessary to build a culture of safety and resilience, there is need to develop age specific and appropriate learning tools and materials. Such tools and materials should be child friendly, easy to use and able to convey appropriate messages on risk awareness and disaster preparedness. Some examples of applications or games can include the following:

- Applications for earthquake risk assessment at family and school level. The app should help the children to assess their family or school readiness or preparedness to disaster risk such as

earthquake, floods and landslide. Target Audience is adolescents and youth with access to mobile phones.

- Games for young children to teach them how to prevent hazards such as fire, floods, earthquake and landslides. Target Audience is early childhood development and primary school children. The games can be designed for each hard or a combination of two.

6. Child Marriage

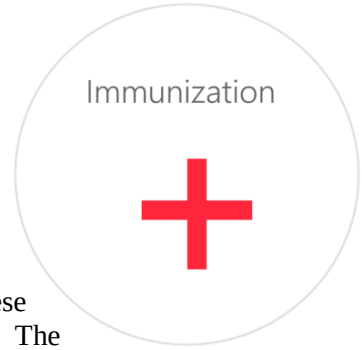
Problem:
Child marriage is increasingly becoming a priority concern at the global, regional and country levels with growing experience and evidence on the causes and consequences of the practice as well as what needs to be done to end it. Despite Nepal being signatory to a number of international charters and covenants that discourage child marriage (e.g. the Universal Declaration of Human Rights, Convention on the Elimination of all Forms of Discrimination Against Women, and the Convention on the Rights of the Child), and having supportive domestic legislation which defines the minimum age of marriage for boys and girls as 20 years without the consent of the parents and 18 years with parental consent, child marriage remains a key issue of concern. 29% of girls aged 15-19 years are married and 41% of Nepalese women aged 20-24 years were married before they turned 18 (Nepal Demographic Health Survey 2011). Among the married population, around 11% were below 15 years old by their first marriage (Nepal Census 2011).

Child marriage is a widespread issue throughout Nepal. Although there is some data available via NDHS and Multiple Indicator Cluster (MICS) surveys, overall there is a lack of comprehensive data and figures on the prevalence and hotspots of child marriage in Nepal. Knowledge about the growing trend in self-initiated marriage by young people and elopement is also lacking. What is needed is a tool that will help in the collection of data to map and pinpoint the hotspots of child marriage in Nepal. A mechanism for registering child marriages between adolescents below the legal age of marriage (18 years) would be particularly useful.

Need:
Although there is some existing data available from census, NDHS and MICS surveys, data collection systems are often weak or inconsistent. Information to be collected and maintained in a centralized database would be needed, and could be used to complement existing systems and work of the Ministry of Local Development's plan of action to improve birth and other vital registration systems, including the Ministry of Local Development, Population and Vital Event Registration System. The information needed on child marriages includes the following:

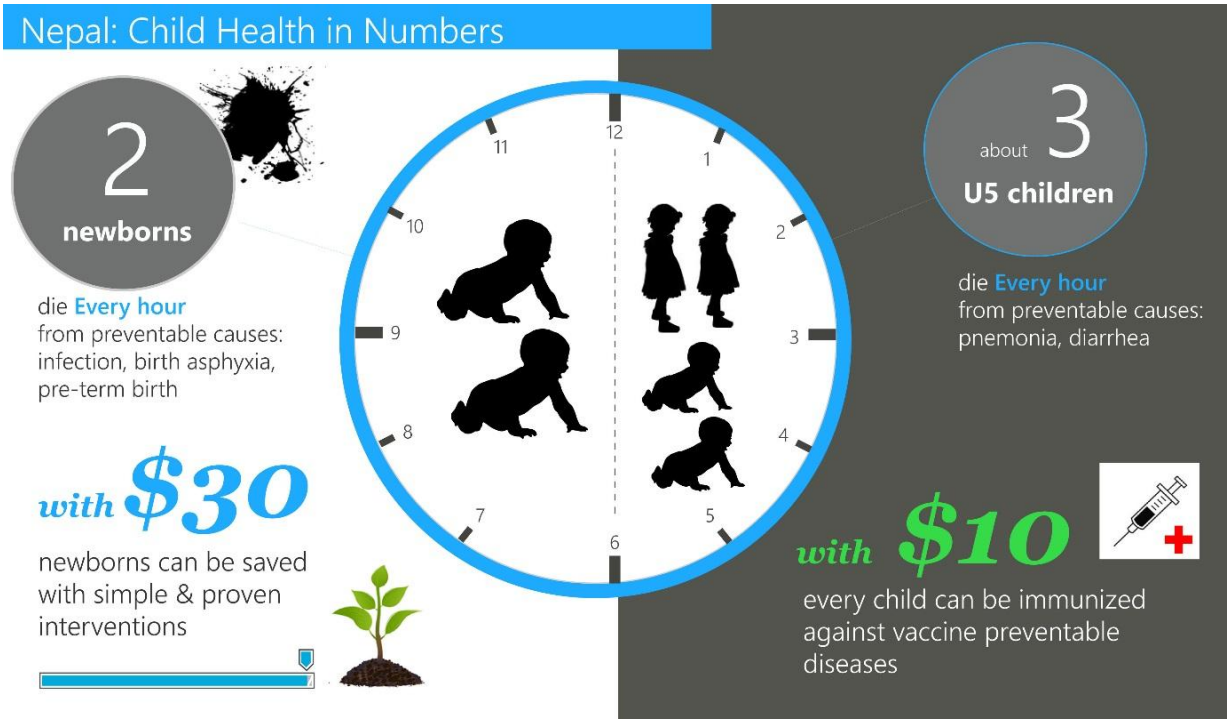
Names of married wife and husband; ages of married wife and husband; date and place of marriage; chosen faith of wife and husband; name of religious leader who married the couple; VDCs and districts of origin of wife and husband; ethnic background/s of wife and husband; birth registrations of wife and husband; names of parents of both wife and husband; levels of education of wife and husband (or if not applicable, reasons for not attending school); occupations of wife and husband; names of children of wife and husband (or existing children from previous marriages); health status of wife and husband

7. Immunization



Problem:
Immunization is considered as one of the most cost-effective health intervention. Immunization has not only reduced the burden of vaccine preventable diseases, but has contributed to achieving the Millennium Development Goal (MDG4) on child mortality reduction. Currently, the Government of Nepal provides vaccination against TB (BCG), diphtheria-pertussis-tetanus-hepatitis B and haemophilus influenza (DPT-HepB-HiB), poliomyelitis (OPV) and measles throughout the country and JE (Japanese encephalitis) vaccine in high risk districts through routine immunization. The routine immunization services are provided through health facilities (fixed clinics), private clinics, NGO or INGO clinics, urban clinics, outreach session and mobile teams in geographically inaccessible areas. All vaccines under NIP are provided free of cost.

Despite the strong routine immunization program in Nepal, the drop-out rate has remained as a challenge to immunize every children at proper time. Due to multiple doses of vaccinations, mothers or care givers sometimes easily forget to visit health facility to vaccinate their children at the right time. There is also lack of record tracking system to remind and manage the routine immunization schedule for children.



Need:
Due to the increasing coverage of mobile phone across all age groups in Nepal, there is a huge opportunity to use mobile technology to track vaccination schedule and provide detailed information of various vaccines for mothers or care givers. We expect to have a mobile or computer-based application showing a tailored schedule of vaccination and effect of vaccines for the children with a reminder alarm. If mothers, primary care givers, or health workers provide date of birth information of a child, the application may automatically pull up show vaccination schedule with record-keeping function. Also, detailed description of the effects and importance of the vaccine may be provided, so that all children are not dropped out from routine immunization schedule and also mothers and care givers can make an informed decision on vaccination.

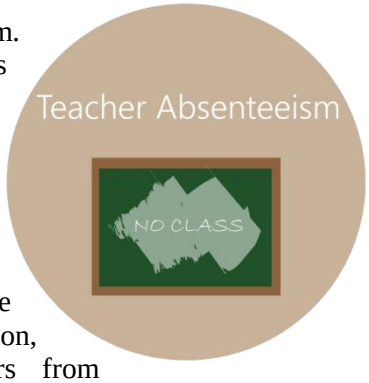
8. Fathers involvement in Early Childhood Development

Problem:
Children whose fathers have been involved in their upbringing from the beginning perform better academically, and show better social and emotional development. The parents of Nepal have tremendous knowledge about child rearing, but early stimulation of children is not practiced throughout all families. Traditionally caring for children is seen as the mother's task in rural areas and parents in the urban context often face the challenge of having to earn a living with strict working hours and high levels of demand, so that spending time with their small children to play and cuddle can be forgotten. Generally fathers tend to understand playing with the young ones as the mother's role only.

Need:
A supporting tool for fathers would be useful, which either gives them the chance to spend time with their children through a common play or raises their awareness on their role in bringing up their children to become happy and successful adults. This tool should provide opportunities to discuss existing practices and finding possible alternatives and address some insecurities that men might face in taking care (bathing, dressing, bringing to bed etc.) and playing with their small children.

The tool should creatively suggest ways how to increase father's involvement from the start so that both parents can share the care work and show love and affection to the child in a same manner.

9. Teacher Absenteeism



Quality of education starts with teachers' "warm body" inside the classroom. However, one of the issues that media has been raising regularly, as well as UNICEF's monitoring report is on teachers' absenteeism, meaning teachers missing classes, and on school opening days.

In October 2009, UNICEF Nepal contracted the Teachers' Union of Nepal to undertake an assessment of seasonal factors impacting school attendance in selected schools of the Karnali zone in order to produce recommendations on strategies to reduce student and teacher absenteeism in the region. The study collected qualitative and quantitative data through focus group discussion, interactions, structured questionnaires and school attendance registers from respondents including head-teachers, teachers, students, members of School Management Committees (SMCs) and Parent–Teacher Associations (PTAs), parents, community members, District Education Officers, Resource Persons and School Supervisors associated with 18 primary and secondary schools in the districts of Jumla, Humla and Dolpa.

Problem:
The main finding of the study mentioned above was that for schools in the region, approximately 83 schooldays are lost each year through absences linked to seasonal events. This is nearly 38 per cent lower than the government standard of 220 school-days per year. This does not include school-days lost for non-seasonal factors.

Students identified as most likely to be absent were children from poor families, followed by Dalit children, children from households engaged in agriculture or livestock-raising, girls, and children living far from school. The main seasonal factors cited for student absences were yarchagumba collection and harvesting/planting in May and June; temporary settlement away from school during the farming season also in May and June; hay-making in August and September; migration away from the Karnali region to avoid cold weather in December, January and February; and local festivals

in February, May, August and November. Non-seasonal factors included family poverty meaning that children had to work to supplement family incomes rather than attend school; lack of parental awareness on the importance of education, especially for girls and children from Dalit families; teacher absenteeism; lack of child-friendly classrooms and teaching–learning practices, including lack of adequate weather protection; school located far from home, making it difficult for some children to reach school especially during adverse weather conditions; and untimely textbook distribution.

Teachers identified as most likely to be absent were those originating from outside the district, followed by those attending training and seminars or involved in higher education, local teachers, and female teachers. The main seasonal factors cited for teacher absences were early departure for vacations in September/October and December; late return after vacations in October/November and February; yarchagumba collection in May and June; involvement in faming activities during May/June, August/September and November; and migration away from the Karnali region to avoid cold weather in December, January and February. The main non-seasonal factors cited for teacher absences were poor management of teachers in schools, with no District Education Officer nor School Management Committee mechanism to regulate teacher absences; participation in teacher training, with no system for providing a substitute during these periods; involvement in secondary occupation such as trade or business, causing teachers to miss classes; and engagement in activities for Teachers' Union, political parties, or NGOs.

The main problems highlighted by study respondents in addressing student and teacher absenteeism included the lack of effective mechanism for supervising, monitoring and controlling student and teacher attendance; the lack of adequate teachers' positions in schools; inaccuracy of school attendance records; inflexibility in the development of individualized school calendars; the inability of School Management Committees to monitor student and teacher attendance in their schools; the lack of accountability for head-teachers and teachers; the lack of safe, weather-protected, child-friendly school facilities and teachers trained in child centered teaching–learning methodologies; and generally low awareness by parents/guardians of the importance of education and the need for regular school attendance.

One of the major recommendations from the study was to develop a strong regulatory and monitoring mechanism. Furthermore, it states that monitoring and supervision of the education system should be enhanced, with a system of assessment to review performance at each level. The District Education Officer should be empowered to strengthen school monitoring. School Supervisor positions should be filled, and made functional and effective. School Supervisors should be motivated with incentives and rewards, based on their performance.

Need:

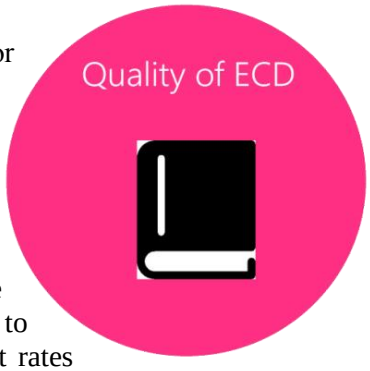
While the above recommendation is ideal and will help to strengthen the system, it is necessary to think "out of the box" and bring a paradigm shift in the school monitoring system. Instead of duty bearers, it is time to seek the alternative and the key stakeholders, which are students, to monitor the school as well as the absenteeism of the teachers. Students come to school with a thirst for education. However, the continual pattern seen with absent teachers hinders this learning opportunity. To control this issue better, teacher absences should be closely monitored by students to secure their education. Rural areas like the Midwest and Terai districts struggle more from teacher abseentism.

An application that uses technology to build a monitoring system usable by students to report on cases where teachers don't come to classrooms is needed.

With the applications, students should be allowed to keep record and report on three areas:

1. No. of days schools open
2. No. of days teaching or learning took place
3. No. teachers absent and no. of days they are absent and the reasons for their absence

10. Quality of Early Childhood Development Centers



Problem:
Early childhood is the time in every person's life that lays the foundation for growth, learning and development for the future and ninety per cent of the brain development takes place in the first five years. At this time it is extremely important for all children to get enough opportunities to gain knowledge through exploration and interaction with their family members and peers. In Early Childhood Development (ECD) centers, they are provided with opportunities to learn through stories, songs, dance and games based on child-centered learning methods according to their age and interest. In Nepal these centers play an important role in the transition to school, resulting in higher promotion rates at Grade 1 and lower dropout rates later on. Research has shown that children with ECD experience not only have higher literacy and numeracy skills, but also demonstrate enhanced social skills.

In recent years there has been an impressive expansion of ECD in Nepal. The gross enrolment rate has increased rapidly: from 39.4% in 2004 to 72.9% children (73.1% girls, 74.3% boys) in 2011. Data reveals that in the 34,174 ECD centers a total of 1,053,054 children are enrolled (506,731 girls) (MOE, Flash report 2012/13). However, these figures do not provide information on the actual learning situation of children and the quality of services. Field visits have shown that a relatively high number of under- and over-aged children are enrolled and it is also observed that children of grade one and ECD age are learning together in one room (with more than 30 boys and girls around). But children of grade one and ECD age have different requirements and facilitators lack the technical skills and knowledge to address the psychosocial aspects of so many young children at the same time. Combined with resource constraints and poor sanitation facilities there seems to be an overall poor quality of ECD centers in many cases, but no baseline data is available so far. All this is hampering the holistic development of children.

Need:
Information on the situation in ECD centers should be collected regularly and maintained in a centralized database. This would be needed to monitor the quality of ECD services and to inform further government and UNICEF activities. Data could be collected on for example:

Name and location of each centre in a district; type of each ECD center (school based, community based, private); number of schools having separate ECD room; toilet facilities available; number, age, sex, ethnicity of all children per center; number of facilitators per center; number of ECD centers providing mid-day meal; children in the centers obtained birth registration

Outreach

1. Boot Camps

Interested participants of ChildApp had the option to participate in free technical boot camps hosted at Microsoft Innovation Center. Boot Camp was a three day session to learn various programming skills, as well as to be further briefed on the ChildApp problems by UNICEF domain experts. It was great opportunity for UNICEF colleagues to interact with the students, receive and answer to questions from the audience on the problem statements proposed for ChildApp. Most participants were interested in joining ChildApp for the opportunity to develop an application, but several students were genuinely interested from their passion for children's well-being in Nepal. 380 applicants who submitted applications for ChildApp were trained in the boot camp. Most were engineering students in college.

5
Camps

380
participants

- First Boot Camp: May 5-May 7, 2014
- Second: May 21-23, 2014
- Third: May 28-30, 2014
- Fourth: June 4-June 6, 2014
- Fifth: June 16-June 18, 2014

ChildApp bootcamp, during questions and answers session/ © Sonika Manandhar/ 2014

ChildApp bootcamp/© Sonika Manandhar/ 2014

2. College Roadshows

ChildApp Roadshow/ © Sonika Manandhar/ 2014

ChildApp roadshows were held in colleges mainly in Kathmandu from May 1st until June 15th, 2014. Presentations were given on the nature of ChildApp, competition flow, and the proposed problem statements.

3. Stakeholder Meetings

Meetings with domain and technology experts were conducted to receive insights and feedback on the initiative and to seek areas for collaboration.

Domain Experts

Partners and organizations working on issues related to children were invited to UNICEF office. A presentation was given to this group on the motives of ChildApp, as well as to seek opportunities on how the stakeholders can further engage technology in solving the existing issues around children in Nepal. Organizations such as Save the Children, World Vision, World Education, SathSath, Women Lead Nepal Board, Yuwa, Global Action Nepal/National Campaign on Education for All, CWIN, and Terres des Homes attended the meeting.

Feedback from stakeholders:

- Suggestions to include additional problem statements: sexual abuse, trafficking, corporal punishment, school bullying, child abuse
- The applications should be linked to all existing tools available
- Some were interested to take the application forward that matches their interest, and wanted to commit in mentoring the teams to prepare them to make their product pitch
- Applications should be user-friendly

Collaboration areas:

- Participate as mentors to help teams participating the Appathon. They can assist by providing further domain expertise and guidance to the teams on the problems the teams would be developing solutions for
- Contribute a problem statement other than the ones identified
- Promote ChildApp Appathon to relevant parties

Technical Experts

A separate session was organized with the technical experts at Microsoft Innovation Center office. Experts affiliated in the technology field were invited to have a roundtable discussion to give proper insights on the plan with ChildApp. Many were also interested in engaging and contributing their expertise and time at ChildApp mentoring teams.

4. Tech Mela 2014

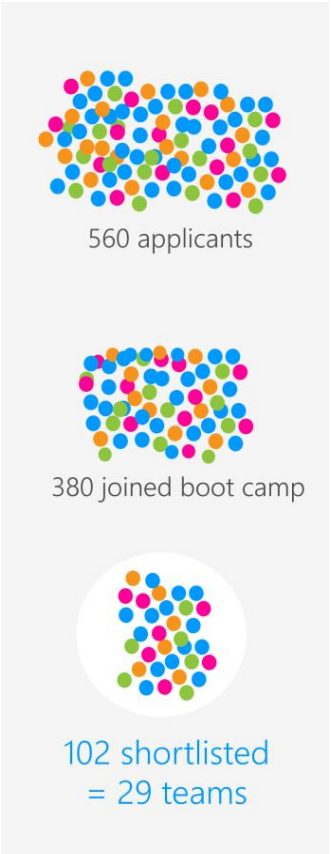
Tech Mela 2014 was an event organized by MIC to create a platform where different Information Technology (IT) communities can network, as well as discuss on the future and high-end technologies of Microsoft and beyond. Amjad Rabi, Chief of Social Policy & Economic Analysis at UNICEF Nepal Office was invited to speak in the panel discussion on the theme, "Role, challenges, and issues of Information Technology in non-IT sectors." While explaining the role of IT in UNICEF, it was an appropriate timing to introduce ChildApp, where technology can play pivotal role in solving the development issues around children in Nepal. ChildApp was also promoted through TV and newspaper interviews through this event.

5. Facebook Campaign

Facebook pages of all partners involved were actively used as promotional tools – cover photos and profile pictures were branded with ChildApp banners. Microsoft Innovation Center launched a Facebook campaign from May 16th, 2014 to the 2,600,000 target audience living in Nepal.

Shortlisting

Total 560 applicants submitted applications to participate in ChildApp. Of the 560 applications, 380 were trained in the boot camps to be more equipped with technical skills, as well as to learn more about the problem statements. Of this pool, 102 young developers, programmers and designers were shortlisted to attend the 54 hours Appathon race, who then came together as 29 teams.



1. Judging Criteria:

Innovative concept

- How innovative is the concept?
- How much does the solution improve upon existing solution alternatives?
- How does the team aim to solve the existing issues of children with their app idea?

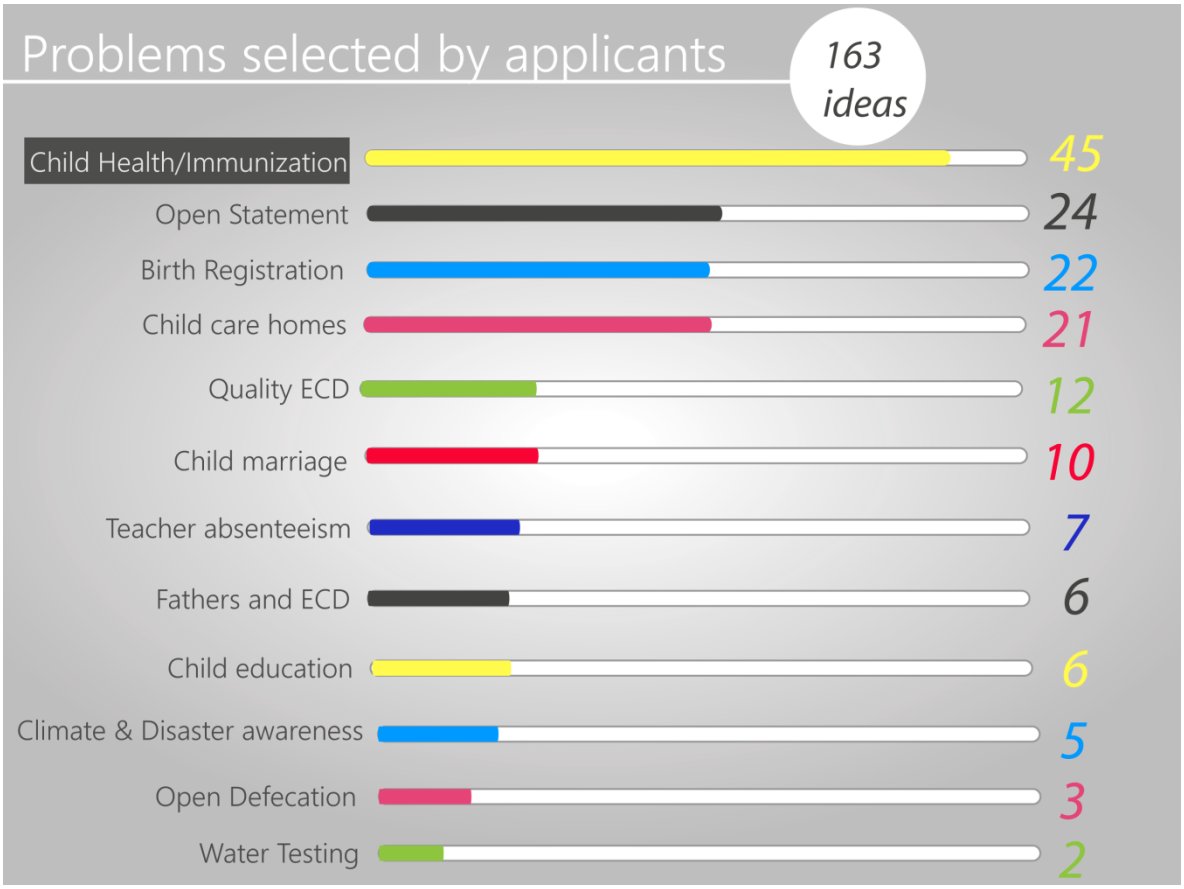
Skills

- Programming/Development Skills

Previous experiences in programming and development

- Previous participation in similar events
- Previous projects

2. Problem Statements selected by applicants



Open Statements some applicants identified as problems to tackle:

- Street children
- Social development of autistic children
- Girl trafficking
- Marriage registration for love marriage problems (family pressure or runaway marriage)
- Emotional value
- Food problem in orphanages for orphans
- Donation to child care
- Information on child abuse
- Addressing different problems related to child protection such as: child labor, child abuse, child exploitation, etc. by providing transparency to larger mass and concerned authorities
- Child sexual abuse
- Education for disabled children
- Autonomous, distant as well as interactive learning
- Malnutrition
- First aid
- Encouraging children to be aware of environment and sanitation
- Infant mortality
- Finding foster homes and parents
- Child security from kidnappers
- Child sponsorship

The **29** teams shortlisted

Team	Area	Solution Name	Description
Arion	Health	Khop for Hope	App for mothers and caregivers to remind immunization dates and to record previous vaccinations. Provides information on the nearest vaccination facilities, and allows interaction with doctors/health workers during vaccination day. Health workers can add updates and generate reports of the immunized children
CodeBuzzers	Child Protection, ADAP	Muskaan	Connects users and organizations to sponsor a child through organizations supporting oprhans and street children
CodeGeeks	Education	Class Keeper	Keeps daily attendance record of students and teachers. Sends notifications to concerned authorities if any teacher is absent for long
Code Glutters	Health	cbing	Map-based app that locates nearby facilities dedicated to children welfare such as Montessori, child immunization center, child care centers, children hospitals, fun parks, child protection centers, and stores with children products.
Creative Mind	Health	Child Information System	Provides different statistics of children surveys (literacy, water availability, ODF, child marriage) that can be individually used and locate which parts in Nepal children are facing which problems displayed on google map.
creatu	Child Protection, ADAP	Catcherup	Upload photos/videos of vulnerable children and share with the concerned authorities and organizations. Also forum available to share information with other users registered in the network
Disaster Saver	Disaster Recovery	Disaster Saver	Game and web-based application for children to build awareness on the effects of natural disasters such as flood, earthquake, and landslides.
Easy Soft	Health	AAMA	A guide for mothers on the steps to take care of their child from pregnancy until five years and older. Features different learning methods such as games, painting, etc. App also checks whether the child is deprived of necessary health check-ups such as vaccinations and reminding parents such as vaccination schedule via automated SMS.
Emergency food	Child Protection	Emergency Food	Connects leftover food in hotels and restaurants with institutions helping orphans and children
Engineering ADDA (First place)	Water Testing	Paani	Tests safety of water by developing a sensor that can be placed in water and does real-time tracking of the Ph results and bacteria levels with location information.
Etechneers (2nd place)	Education	Interactive Virtual Classroom (IVC)	Creates a virtual classroom where children can learn, interact, and build personality, confidence, creativity through interactive games. App uses Microsoft's Kinect device along with the program.
Freaks	Child Protection, ADAP	ChildHub	Collects data on vulnerable children – street children, lost children, orphans, and ones who

			went through child marriage. Users can send photos and information of them to organizations/concerned authorities. Also connects orphans to those interested in adopting a child
Gorkhali	Child Protection, ADAP	Sahayog	Provides a list of childcare centers and the information of children in these centers. If a person sees a helpless child on the street, they can send photo and upload them. This data will be sent to the childcare centers and help the child. Citizens interested in donation can easily send funding via mobile phones. If someone sees a child being abused, they can report to the right authority and keeping their anonymity. Feature also available for those interested in adoption.
Hyaptos	Education	Cabrito	Educate parents to understand their children's growth and to know about development milestones of their children.
Matina	Child Protection, ADAP	Save Your Child	Helps children to communicate in a less shameful way to their parents if they have been sexually abused. App will try to protect them from future incidents through features offered in it.
NepDragons	Water testing, ODF	Revelation	Keeps track and monitors ODF across the country through a designated center or via SMS. Users will be subscribed to a service where they will be alerted regularly for important immunization dates etc.
PHPR. PULCHOWK	Child Protection	Talkulator	A talking calculator mainly for the blind children. Performs simple tasks such as calculating additions, subtractions, multiplications by speaking and the calculator answering back with the answer. App can also be used as education tool for early age children.
Shisu Care	Health	Shisu Care	Provides information on child health such as nutrition, immunization, hygiene, and sanitation. Information on locally available food items to ensure managing a proper diet.
Soulmaintain	Health	Birth registration & Immunization	Online birth registration app. Able to register directly from hospital, health posts and home. Notifies users on upcoming vaccination dates and important notices on child health using an automated system.
TeamStriker	Health	Shayogi Haath	App that provides information on immunization, birth registration, and early childhood development information
Techgirls	Health	Pebia-Tech	Provides information on different health symptoms of various diseases and safe home remedies. Also gives malnutrition information and nutrition recommendations.
The CodeCrafters	Education	iVillage: Smart Learning Kit	Education kit that disseminates teaching materials in cost-effective way to the remote regions. Combines several sets of customized games, interactive learning modules for students and

			teachers. Assures proper and timely data transmission with regular updates and feedback.
The Conscientious	Health	Immune your Child	Allows parents to register one or more child's birthday, weight, gender, and location. Receives vaccination schedule for each registered child via mobile. See nearby vaccination centers, and also has "Request for Home Visit" feature, where concerned groups can visit the location to give immunization. Provides nutritient information as well based on age, gender, and weight.
The Rising Coders (3rd place)	Health	SMS Care	Gives information on the prenatal and postnatal care of mother and child. Makes birth registration easy with the use of SMS and the web. Once pregnant, SMS sends information to the server. Server sends back unique confirmation code to the sender. SMS sent to server at certain intervals with information on prenatal care. After birth, sender sends another SMS confirming birth of child with the code, date, and time.
The SPS TEAM	Child Protection, ADAP	We Care	Create a unique profile of a child by uploading photo and details. Relevant organizations and authorities in children welfare will have access. This app is to be used for assembling data and provide to these organizations and to prevent any violence against children.
Save the Child	Child Protection, ADAP	Save Child	Reports and registers vulnerable children or victims of abuse: child labor, child marriage, etc. Also informs news related to children and notifications of children related events. Provides educational information on the consequences of child marriage through audio/video aids
Valar Morghulis (Top 5 finalist)	Child Protection	Beautiful Minds	Provides assistance to children with autism. App features programs to help cope with social and communication barriers. The app assists parents to monitor their children's behaviour and to interact with them through the application.
WhyIt (Top 5 finalist)	Education	Haziri- A smart attendance system	Real-time monitoring system tracking teacher's presence in the classroom. System custom built on an electronic transceiver. The concerned authorities can access and check their presence-absence log through the application.

Program Sketch

ChildApp was held June 27th to June 29th, 2014 as a 54 hours race at Dhulikhel Lodge Resort in Dhulikhel, Nepal. 29 teams participated in the 3 day race and took the challenge to develop a working prototype during the limited time.

June 27 (Day 1)

Together we can help develop Nepal to have a better future for children.

Inauguration Ceremony

Participants were escorted to the Main Hall for the inauguration ceremony. Chief Guest, Hanaa Singer, former Representative of UNICEF, enlightened everyone with her inspiring and motivation speech on "Yes, we can!" Audience roared at her powerful yet encouraging statements emphasizing that the participants are the future of Nepal. An MoU signing took place between UNICEF Nepal and Microsoft Innovation Center Nepal. The two parties agreed to develop their collaboration in the areas of creating a platform for IT population to share and develop technology solutions for the social challenges related to children in Nepal; contribution of technology resources in the Innovation Incubator for the Idea Studio to foster innovation and growth; mentorship of social innovators in areas related to information and technology; and the promotion of a culture of innovation and entrepreneurship among young people.

Program Briefing

Once teams were invigorated with the official start of the competition, they were briefed on schedule and regulations of the competition. ChildApp shirts, name cards, and branded stationeries were distributed. Everyone was geared up for the 54 hours race.

Solution Development

The whistle blew announcing start of the race. The 29 teams split across the main hall, dining hall, and the garden to brainstorm, and plan for their 3 day strategy.

ChildApp Appathon atmosphere / © Ko Woon Park/ 2014

Teams developing their applications / © Ko Woon Park/ 2014

Speed dating with the Mentors

Mentors with domain and technical expertise were recruited for this Event. Professional experts from UNICEF, Childreach Nepal, Women Lead Nepal, as well as private sectors volunteered to dedicate their work hours and weekends to mentor the teams. About 30 mentors visited, staying up with the teams day and night, guiding them with knowledge and information. For example, a mentor from child protection or health provided domain knowledge on how the system is operated in Nepal on their area of expertise. A mentor from IT background gave guidance on programming part of the application development.

Before mentors were introduced to a particular team, a speed dating was organized between the team and a mentor. 30 mentors went around the table meeting each team for one minute, learning about their ideas and planned solutions, and decided on which team they will mentor for the day(s).

Tips on Presentation & Networking Skills

A session by Allen Tuladhar, the Country Director of Microsoft Innovation Center Nepal, the presentation was on how best to give a powerful pitch in a short time. Since the teams were expected to give a presentation and a demo in 5 minutes, this session helped the participants to be reminded of keeping their points focused and concise.

ChildApp

Mentors from UNICEF

Miku Watanabe, ADAP

Hyung Joon Kim, C4D/Health

Tomoo Okubo, Social Policy

Maija Liakka, Child Protection

Raju Maharjan, IT

Mentors interacting with teams / © Ko Woon Park/ 2014

June 28 (Day 2)

Second day was all about never-ending story of developing. developing. and developing.

After a long night thriving in endless team meetings, solution development and design, the unwavering spirit in developing applications continued throughout the second day.

Teams working to finalize their applications / © Ko Woon Park/ 2014

Lantern lighting & Power Dance Time

The energy in the rooms reached maximum decibel. To help teams relax, the organizers planned an entertaining time. Everyone gathered outside for a lantern lighting time and power dancing. Representatives from each partner lighted and flew a paper lantern up in the sky, along with the dreams of everyone present. After the symbolic ceremony, the DJ turned up the volume inviting everyone on the dance floor. An hour long of power dance took place where participants shook off tension and had nothing but fun.

June 29 (Final Day)

Pitch Fest

Judges from domain experts, private sectors took seats and were briefed on the judging criteria. Each team was brought in the pitching room one by one and had 5 minutes to pitch their idea and give a demo. Pitch Fest lasted until 2:00pm.

ChildApp Pitch Fest/ © Ko Woon Park/ 2014

Closing Ceremony

Closing ceremony took place to congratulate everyone's hard efforts. Closing speech was given by Hanaa Singer, former Representative of UNICEF, and Dr. Ram, the Vice Chancellor of Kathmandu University. The Singing Nun and UNICEF's national ambassador Ani Choying Drolma also congratulated the teams, and encouraged them to take the journey further to live their dreams.

The top 5 finalists, including the 1st, 2nd, and 3rd place winners were announced. 1st place winner received Nrs. 100,000, 2nd place Nrs. 50,000, and 3rd place Nrs. 10,000. All top finalists were awarded with tickets to go straight to the Idea Studio incubation program and the opportunity to pitch in TV show, without going through additional shortlisting process.

First Place: Team 'Engineering ADDA' (Milan Karki, Darpan Pudasaini, of Nepal Engineering College / © Tomoo Okubo/ 2014

Second Place: Team 'Etechneers' (Bibek Sharma Chapagain, Samira Sharma, Sanjita Sharma and Bikram Awale of National College of Engineering)/ © Tomoo Okubo/ 2014

Third Place: Team 'Rising Coders' (Abhishek Paudel, Arun Kumar Agrawal, Manish Chandra and Nabin Bhattarai of Institute of Engineering, Pulchowk) / © Tomoo Okubo/ 2014

Press Coverage: *App testing safe water wins at ChildApp Appathon* / Tech Republica Today

App testing safe water wins at ChildApp Appathon

REPUBLICA
KATHMANDU, July 1

ChildApp Appathon, a three-day boot camp to develop child friendly apps, concluded on June 29 with the group 'Engineering ADDA' winning first place. Milan Karki and Darpan Pudasaini of Nepal Engineering College came up with an application that 'tests the safety of drinking water and displays the results with location information on a map'. They were awarded with a trophy and a cash prize of Rs 100,000.

A joint initiative of UNICEF, Microsoft Innovation Center Nepal and Childreach Nepal, the boot camp was held in Dhulikhel from June 27. The objective was to develop original web, phone, desktop and game applications to solve common issues related to children.

After a careful selection, 380 applicants were chosen out of the 560 applicants for the camp. Next, 102 developers, programmers, and designers were shortlisted to be part of the competition where they worked in 29 teams.

The participating teams worked to develop applications on different important areas. According to the press release, water quality testing, information about vulnerable children, teacher absenteeism, educational package for children with autism, immunization as well as applications to aid pregnant women and mothers were some of the topics.

Experts from banking, child rights and technology sectors volunteered their time and expertise to mentor the 29 teams.

The second prize went to 'Etechneers' comprising Bibek Sharma Chapagain, Samira Sharma, Sanjita Sharma and Bikram Awale of National College of Engineering. The team's application provides services such as virtual classroom and birth registration via SMS. They were awarded with a cash prize of Rs 50,000.

'The Rising Coders' took home the third prize of Rs 10,000. Abhishek Paudel, Arun Kumar Agrawal, Manish Chandra and Nabin Bhattarai of the Institute of Engineering, Pulchowk Campus, developed an application which provides information about prenatal and postnatal care via SMS.

Two teams received honorable mentions at the competition: The 'Whylt' team of Dipendra Shrestha, Krishna Parajuli, Prakash Aryal and Thakur Neupane focused on teacher absenteeism in their application, while the 'Valar Morghulis' team of Anup Karki, Prasanna Kumar Gyawali, Aayush Kumar Chaudhary and Aman Kandoi developed an educational package for children with autism.

The teams in the top five will next be part of 'Idea Studio', a mentorship program where they will receive training as well as investment to work toward converting their ideas to reality.

Epilogue

1. Meeting the UNICEF Team

The 29 teams participated in ChildApp were invited to UNICEF Nepal office to meet with the program sections. Teams that developed solutions on immunization, child and maternal health were introduced to colleagues from Health section. Teams that developed solutions relevant to the topics of child labor, street children, met with colleagues from Child Protection and ADAP sections.

Meeting objectives were to give teams another opportunity to present their applications to the domain experts and receive valuable insights and feedback, and incorporate them when perfecting their applications. In addition, it was to explore whether the creative applications developed by the young generation can be actually placed as sustainable solutions. If sections should be further interested in the possibilities to scale the applications, they were welcomed to collaborate with the teams and integrate them into their existing programs.

Several program sections were interested in taking this further step. WASH colleagues invited two teams (1st place winner on water testing, and another team who developed application to track and monitor open defecation) to present their applications at meeting with stakeholders. Social Policy & Economic Analysis section hired one of the winning teams to rollout RapidPro software at its sponsored SSMK radio program. Finalists also met with Dr. Sharad Sapra, Prinicpal Adviser and Director of the UNICEF Global Innovation center and presented their innovative ideas. In addition, the winning team 'Engineering Adda,' who developed the application for real-time water testing, met with the United States Embassy and explained their initiatives and product.

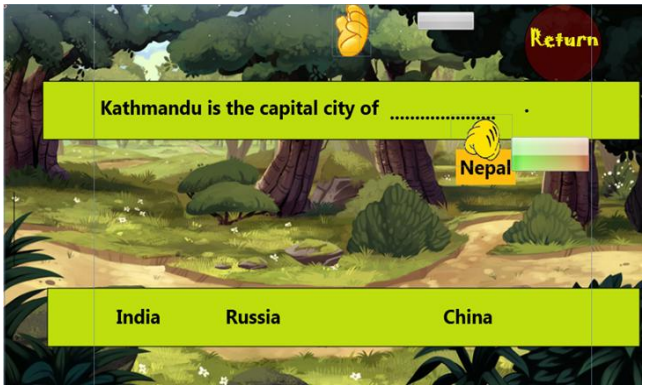
2. Apps Launched on Windows Store

Teams were encouraged to take their prototypes further and develop into full working applications and launch on Microsoft's Windows Store. Some teams that finalized in taking the further step were the following.

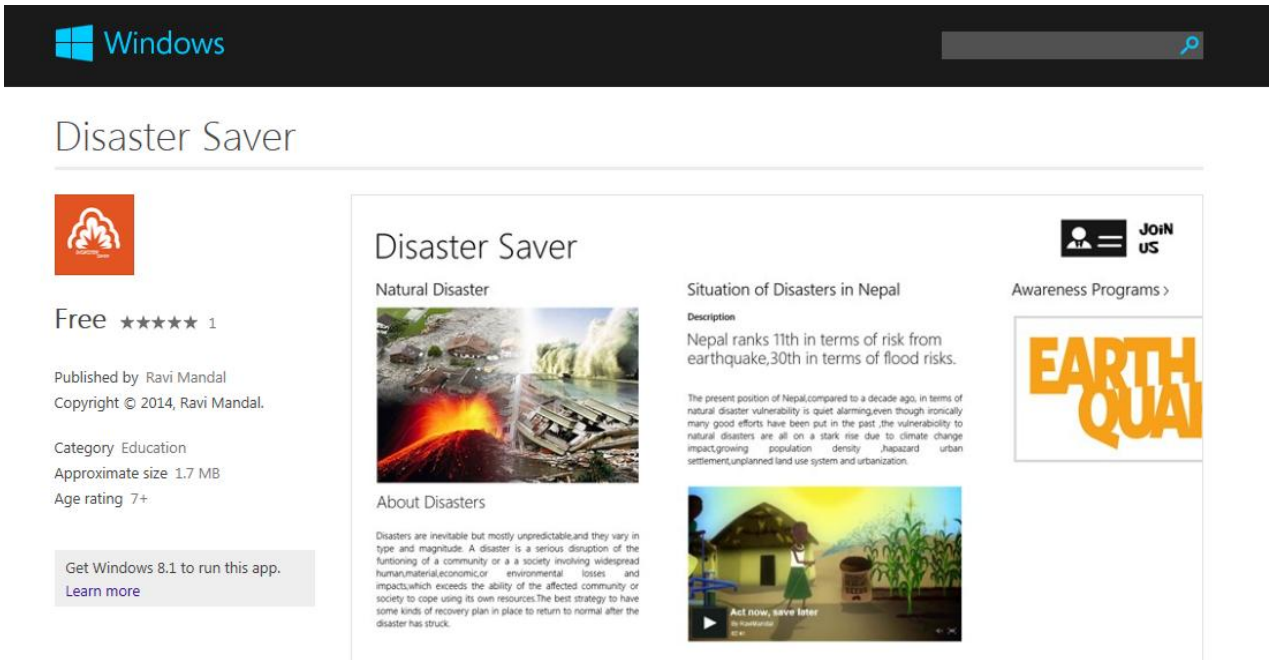
Team: Etechneers (2nd place winner)
Application Name: Interactive Virtual Classroom (IVC)
Area: Education
Description: Interactive Virtual Classroom is an application that creates a virtual classroom through which children can learn, interact and build up their personality, confidence and creativity.

The traditional method of teaching is not sufficient for the intellectual development of today's children. Bringing active participation in the classroom is growing to be more difficult. This is because knowledge through pencils and paper does not seem to motivate children. Although technology is advancing beyond our imagination these days, it is not effectively being used for educational purpose. Interactive Virtual Classroom (IVC) tries to focus on such problems seen in today's education system and develop modern, interactive learning methods. Through this app, learning is brought to life with active engagements and experiences for students. IVC is primarily focused on exploiting the features of Game Based Learning (GBL). The application helps children to learn with physical involvement using Microsoft's Kinect which makes learning fun and exciting. Using GBL, students will get a positive experience about learning, memorizing concepts, reinforcing and consolidating knowledge in a friendly environment and

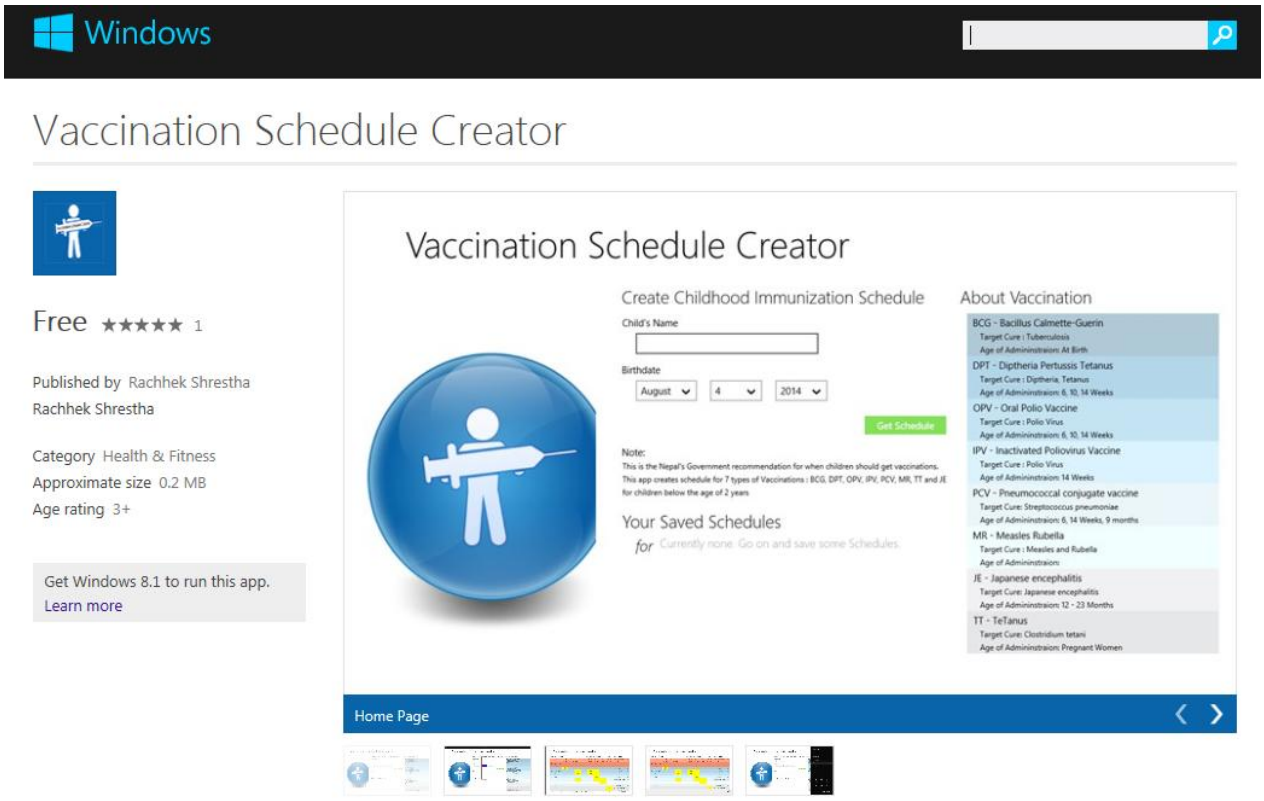
understanding the consequences of their choices. This kind of learning corresponds to "doing", "reflecting", "understanding" and "applying" with the help of interactive games.



Team: Disaster Saver
Application Name: Disaster Saver
Area: Disaster Recovery
Description: Application to raise awareness for children and educate them on the effects and actions to take during natural disasters such as earthquakes, floods, and landslides. It is equipped with game and video tutorials easily showing and teaching how to be safe during natural hazards.



Team: Arion
Application Name: Vaccination Schedule Creator
Area: Health
Description: Application creates vaccination schedule for a newborn baby or children under age 2. users are able to find brief introduction to the different types of vaccines and their effects. The application automatically generates which days of the year the child needs to get vaccine.



What's Next?