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DIGITAL NATIVES WITH A CAUSE?

A Knowledge Survey and Framework by Nishant Shah
and Sunil Abraham

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Table of Contents

Summary	6
Knowledge Survey and Framework Report	10
1. Introduction	11
1.1 Context	11
1.2 Scope and Focus	12
1.3 Methodology	13
1.3.1 Survey of Literature	13
1.3.1.1. Typology of Literature	13
1.3.1.2. Limitations	14
1.3.2. Consultation and Conversations	14
1.3.3. The Knowledge Framework	14
2. Literature Review – Characteristics of The Digital Native	15
2.1 Digital Natives: The Criticism	15
2.1.1. Ignorance and Dumbness	15
2.1.2. Addiction and Poor Social Skills	16
2.1.3. Confessionals and Privacy	16
2.1.4. Self-centredness and Self-importance	16
2.1.5. Digital Piracy	17
2.1.6. Plagiarism and the Digital Classroom	17
2.1.7. Consumers rather than Citizens	17
2.2 Digital Natives: The Applause	18
2.2.1. The Values of Freedom	18
2.2.2. Promoting Tolerance and Co-existence	18
2.2.3. A Call for Diversity	18
2.2.4. Finding Collaborators and Innovators	19
2.2.5. Mobilisation and Participation	19
2.2.6. Information Dissemination & Political Engagement	19
2.2.7. Cultural Production and Interventions	20
2.3 Voices against Digital Natives	21
3. Analyses and Assimilations	23
3.1 Framework Questions and Findings	23
3.1.1. Digital Native Identities, Activities and Roles	24
3.1.2. Theoretical/Conceptual Understanding of Technology-mediated Identities	24
3.1.3. Exploring Youth-Internet Relationships	24
3.1.4. Documenting Role of Internet Technology in Social Transformation and Political Participation	25
3.2 Principle Knowledge Gaps	26
3.2.1. Vocabularies and Frameworks	26
3.2.2 Particular rather than the Universal	26
3.2.3. Digital Natives in Education	26
3.2.4 Digital Natives as Researchers	27
3.2.5. Digital Natives on the 'Other' Side	277
3.2.6. Revisiting the Socio-political Landscape	27
3.3 Policy Guidance	27
3.3.1. Taking the 'e' out of Activism	27
3.3.2. Creating Sustainable Conditions of Change	288
3.3.3. Engaging with the Physical-Virtual Dialectic	28
3.3.4. Multilateral Networks	29
3.3.5. Politics of Funding	29
3.4 Next Steps	29
A. References	32
B. Bibliography	35
C. Knowledge Networks	50

Summary

Digital Natives with a Cause?

Youth are often seen as potential agents of change for reshaping their own societies. By 2010, the global youth population is expected reach almost 1.2 billion of which 85% reside in developing countries. Unleashing the potential of even a part of this group in developing countries promises a substantially impact on societies. Especially now when youths thriving on digital technologies flood universities, work forces, and governments and could facilitate radical restructuring of the world we live in. So, it's time we start listening to them.

About

Although there is much attention for the potential impact of youth as e-agents of change, there is limited knowledge about the subject and this knowledge is mostly focussed on Western societies. Hivos has partnered with the Centre for Internet and Society, Bangalore, to assess the state of knowledge on the intersection between youth, ICT and engagement worldwide and with a specific attention for developing countries. The report *Digital Natives with a Cause?* charts Digital Native scholarship and practice in order to create a framework that consolidates existing paradigms, and informs further research and intervention within diverse contexts and cultures. A summary of the report follows hereunder.

Methodology

The report was compiled in three parts: a worldwide literature survey, including scholarship, public discourse, policies, legislation, anecdotes and incidents in the field of youth and technology; conversations with influential youth and technology scholars, practitioners and activists; and a knowledge framework based on conclusions, suggestions, ideas and projections drawn from the literature survey and conversations, and knowledge gaps requiring research.

Findings

This report assess the state of knowledge on the potential impact of youth as e-agents of change and concentrates on bridging the gap between social sciences and liberal arts research on the one hand, and the world of grass roots practice and global policy on the other. For four focus areas – social transformation, political participation and mobilisation, pedagogic interventions, and livelihood – questions are posed and findings listed. These questions help identify knowledge gaps and detail the survey's focus.

Q: What constitutes a Digital Native identity?

A: Existing literature offers no definite answers, only working definitions: children born after 1980; youths significantly affected by the rise of Internet technologies; an emerging global population growing up with digital technologies central to everyday functioning. No literature attempts to provide either a theoretical understanding or serious expostulation of what a Digital Native identity can mean. Yet there is an increasing amount of anecdotal and scholarly evidence of a generation who relate to digital technologies differently and live in a markedly different way than preceding generations. Scholarship that address this sense of difference is rare; most rely on novelty as the source of the difference, without interrogating the identity's mechanics and politics. Discussions of Digital Natives and their presence/growth devolve into questions of infrastructure-building, safety and education, without adequate theorisation of the identity.

Q: How do we understand Digital Natives as e-agents of change?

A: While scholarship on the 'identity politics and constitution' of Digital Natives is limited, an incredible amount of anthropological and sociological work exists on Digital Natives as e-agents of change. There is constant alarm that the Internet and its collaborative potential are severely underused by

youths who remain apathetic to political participation. However, we believe this alarm rises from evaluating Digital Native activities based on a pre-digital understanding of politics and engagement; and from concentrating on actions rather than the conditions of change that Digital Natives create and in which they mature. Few works have overcome these limitations and demonstrated how new forms of agency and empowerment are created and appropriated by Digital Natives in their everyday relationships with Internet and communication technologies.

Q: What are the factors that bolster our understanding of technology-mediated identities?

A: The survey revealed the existence of an image of technology-mediated identities in general, and the Digital Native in particular, as an almost disembodied identity, without any of the factors or differentials that abound in contemporary scholarship. Some of the more interesting ideas on contextualising Digital Natives come from unusual sources like studies in post-human identities, robotics and the philosophy of science. The few works from these disciplines indicate that key influences must be considered to understand a contextualised Digital Native identity: gender and sexuality; class; language; socio-cultural indicators; and geo-political status.

Q: What new structures must be developed for the young to emerge as active stakeholders in technology-mediated developmental changes?

A: Expert opinions indicate no need to search for new structures that will 'empower' the young in their relationship with technology. They focus, rather, on the potential of existing digital spaces and technology-driven social applications familiar to Digital Natives. Simultaneously, they emphasise convergent and accessible technologies, open and unlicensed technologised platforms, and the creation of public repositories of knowledge and information as crucial to fulfilling the potential of existing digital spaces and applications.

Q: Who are the stake-holders in shaping youth-technology relationships?

A: Governments, who perceive ICTs as a panacea; educators, who play an important role in the engagement and participation of Digital Natives in their immediate environments; the market, which is becoming deeply involved in the governance and regulation of these new spaces and populations; civil society organisations (CSOs), which face challenges in coordinating and harnessing the power of the young for particular causes; and Digital Natives, who have demolished earlier hierarchies and demonstrated new aesthetics of political participation, cultural consumption and social transformation.

Q: What are the changes produced by the emergence of Internet technologies and technology-mediated identities in developing information societies?

A: There is a strong contextualisation and 'domesticisation' of Internet technologies and applications within different regions. Mobile technologies and portable computing devices have fuelled the creation of digital borderlands where youths engage with technologies at an intimate, local level while drawing from public and global paradigms. The systemic change in the history of technology interaction and social application is not so much in 'novel' forms of engagement or participation, but in re-visiting the local with a sense of adventure and playfulness that no other technology has ever allowed. The ability to publish, create cultural products, mobilise local resources, promote community-based causes, and build new forms of socio-cultural relationships has led to a systemic change: Digital Natives – generally posited as hyper-territorial and global – have become fiercely local and embedded in their contexts. Their 'local', however, is also global, because of the reach and the collaborative networking model of the Internet technologies they use to mediate it.

Knowledge Gaps

Based on the literature survey and framework questions, the following knowledge gaps were identified:

- lack of a vocabulary and framework to address Digital Natives' identities and actions;
- lack of research recognising that not all Digital Natives are equal;
- an explanation of changes in Digital Natives' roles and learning practices, and in educators' roles and the nature of evaluation and assessment;
- how Digital Natives reflect on their actions and identities;
- how Digital Natives abuse technology, and possible safeguards that deter abuses but harness its power;
- the changes Digital Natives induce in the conceptualisation of the political.

Knowledge Network

A list of 20 ICT-related organisations was assembled. Many emphasise making conditions of change possible so a Digital Native has the assurance, guidance, support and space to begin his own political campaign. All are web-based, and physically based in Asia, Europe, Africa, or North and South America.

Policy Guidance

Multidisciplinary theoretical approaches venturing beyond the cause-and-effect model and providing the necessary vocabulary and sensitivity are crucial to understanding Digital Natives. The lament that youths are apolitical is a result of insufficient attention to activities that do not conform to existing notions of political and civil society formation. Digital Natives are sensitive and thoughtful; it is time to listen to them and their ideas, and to focus on their development as responsible and active citizens rather than on their digital exploits or technologised interests. Since youth-technology stake-holders have been identified, existing scholarship and interventions can be consolidated to formulate policies.

Five future interventions have been devised

First, given the terms 'digital activism' and 'e-activism' are misnomers, consider youth and activism in terms of the interaction between online and offline engagement. Create conditions that allow youths to exploit technologies they are familiar with and invest in; and create access and awareness among Digital Natives not yet participating in social change. The answer is not in the 'e' but in the 'activism', and in existing political spaces rather than creating new ones.

Second, create sustainable conditions for the young to work as agents of change. Promote youthcamps, barcamps, sourcecamps, exchange, digital broadcast and publishing platforms, organisations expert in the legal implications, and an infrastructure for the germination and growth of effective political ideas using online components.

Third, overcome the physical-virtual dialectic when speaking of Digital Natives. Consider them as techno-social identities straddling physical and virtual realms. Provide physical conditions that raise Digital Natives' awareness of the political edge of their choices and activities, and offer free, guided and safe spaces to experiment with new infrastructure support ideas to shape individual efforts into larger, more effective movements.

Fourth, to consolidate knowledge and experience, create multilateral networks convening the field's major players.

Finally, rethink the politics of funding. Create a model offering incentives, financial assistance and support without the usual mechanics of funding and scholarship possibly beyond the ken of Digital Natives – who are, after all, school and college students, children and young adults. Establish simple procedures and models, without funding complexities and politics, that recognise and support ideas.

Next Steps

This scouting mission displays that digital natives have a potential impact as agents of change. Young people can be an entry point for bringing technology and engagement together. But the answer is not in the 'e' but in the 'activism'. Engagement with youth should focus on their development as responsible and active citizens rather than on their digital exploits or technologised interests. As a first step in working towards enabling digital natives for social transformation and political engagement, a multistakeholder conference (researchers, practitioners, business, digital natives themselves) will be organized fall 2010.

Report

1. Introduction

This scouting mission explores the intersection of youth, technology and engagement, particularly focusing on the Digital Native identity in emerging Information Societies. It builds a knowledge framework and identifies gaps in existing scholarship and practice to inform further research and intervention in the area.

Keywords: *youth, technology, Internet, social transformation, political participation, cultural production, engagement, identity*

Rationale: As younger generations growing up in emerging information societies learn to engage with their geo-political and socio-cultural environments, form of technology-mediated identity that has been popularly dubbed as 'Digital Native', has been at the heart of a growing public and intellectual debate. Moving beyond the existing research in this area, which originates in the Northern Western countries and takes the perspectives of ICT development or adult-centric concern, we seek to construct a developmentalist perspective that aims to explore the larger field of youth, technology and engagement with specific questions at hand: What constitutes a Digital Native Identity and how do we theoretically and conceptually understand this new form of technology-mediated identity? What are the different factors that help understand the everyday practices of these young citizens and the implications for the same? What is the form of current knowledge in this area and what new questions need to be posed in order to look at youth and technology interaction towards social transformation and political participation? What are the knowledge gaps in existing scholarship and practice that need to be bridged to articulate a nuanced and contextually sensitive approach towards understanding Digital Natives and their lives?

This Scouting mission aims to chart the terrain of Digital Native scholarship and practice in order to help create a knowledge programme and framework that consolidates existing knowledge paradigms in this field and informs further research and intervention within diverse contexts and cultures.

1.1 Context

The term 'Digital Natives' (Prensky, 2001) is slowly becoming ubiquitous amongst scholars and activists working in the youth-technology sector, especially in emerging Information Societies. The phrase is generally used to differentiate the generation that was born after 1980 – who has an unprecedented (and often inexplicable) relationship with information technology. It is a term used to make us aware of the fact that these people are everywhere:

- on the roads, taking photos on their mobile phones and uploading them to blogs and photo-streams;
- in public transport, using personal music players and text messaging to create a private virtual island;
- in schools and universities, multitasking, preparing a classroom presentation while chatting with friends and keeping track of their online gaming avatars;
- in offices, glued with equal passion to dating or social networking sites and the geek mailing lists that they moderate;
- in homes and bedrooms, sharing the most private and intimate details of their lives (or having their lives created by other peoples' referencing and linking to them), using live cam feeds and audio and video podcasts;
- in our imaginations, sometimes posing as digital strangers braving into our machines, or appearing as flesh-and-body 'familiar' strangers just a click away.

All of these are the common sense attributes that inform our understanding of a Digital Native identity. These Digital Natives are born into globalised markets and liberal economies; into accelerated communication and digital representations.¹ They have skills and choices to navigate

¹ In emerging information societies, with easy access to cheap digital technologies, the ability of the Digital Native to both capture everyday practices and thought and be captured in other peoples' devices is staggering. User-generated data content sites like Flickr, YouTube or Facebook are constant reminders of how much data is generated on cyberspaces and the immense number of traces and representations we leave; sometimes we are even unaware of our presence in many data-streams.

through the increasingly mediated and digitised technosocial² environments in which we live. Most of the stories around these Digital Natives take on the expected tones of euphoria and paranoia that have historically accompanied the rise of new technologies. Some unabashedly celebrate this new digital identity and the possibilities and potentials it offers; others express concern and alarm about the lack of structures that can impart meaning or shape these identities in ways that can contribute to democracy, equality, community-building and freedom. Both of these extremes are geopolitically and socio-culturally limited (to Northern Western, developed countries and to the educated, affluent and empowered, respectively), and do not provide much insight into the 'Digital Native' identity beyond anecdotal and ethnographic data. Such stories fall into the trap of logical fallacy, using the phrase 'Digital Native' to explain what a 'Digital Native' means. What we get from such literature – scholarly work, policy documents, legislation and public discourse – is more a list of characteristics or attributes that can be used to identify a Digital Native when we see one. Moreover, such literature fails to recognise the potential for social transformation and political engagement by treating the Digital Native as a sub-cultural identity that is subject to transient fads and fashions.

There are three ways in which this type of literature adds to the opacity of the Digital Native identity:

Difference without change: These stories almost always give us a sense of a marked difference of identity in an *unchanging world*. The Digital Native remains a category or identity that remains to be understood in its difference to *integrate it* into a world vision that precedes them. The difference is invoked only to emphasise the need for continuity from one generation to another; and thus making a call to 'rehabilitate' this new generation into earlier moulds of being.

The social construction of loss: Each new technology has always been accompanied by a nostalgia industry that immediately valorises a pre-technological, innocent world that was simpler, better, fairer, and easier to live in. Similarly, the Digital Native identity is premised on multiple losses: loss of childhood, loss of innocence, loss of control, loss of privacy, etc, which together imply the loss of political participation and social transformation; the loss of youth as the political capital of our digital futures.

Trivialising the Realm of the Cultural: The third is that these stories of celebration and fear confine Digital Natives to some 'my bubble, my space' personal/cultural private world of consumption that only accidentally connects to greater socio-political phenomena. They paint the Digital Native as without agency, solipsistic and hedonistic, thus dismissing his cultural interactions and processes as trivial, and implying he lives for indulgent consumption and personal gratification.

1.2 Scope and Focus

It is the ambition of the mission, then, to:

- **Assimilate influential literature about Digital Natives and map the existing positions and cruxes of debates in order to;**
- **build a complex and nuanced understanding of the Digital Native identity;**
- **examine the socio-political potentials of the rise of such a fluid and contextual, technology-mediated identity (as opposed to an identity mediated merely by activities involving technology);**
- **and understand contexts, structures and conditions of freedom, choice and agency within which these identities can emerge as agents of socio-political change and transformation in emerging information societies.**

While the emergence of a Digital Native identity signals a wide array of research and investigation areas, this particular study shall concentrate on bridging the gap between social sciences and liberal arts research on the one hand and the world of grass roots practice and global policy on the other, with a special focus on:

Social Transformation: Looking at identity politics (including but not limited to gender, sexuality, class, ethnicity, religion, etc.) and structures of social interaction and sustainability.

² The term 'techno-social', coined by Arturo Escobar, refers to a social identity mediated by technology. It emphasises that the digital and physical environments need to be seen as connected to each other, rather than disconnected as is often the case in cybercultures and technology studies.

Political Participation and Mobilisation: Examining the effects of digital environments, platforms and tools, and the innovation that Digital Natives use to negotiate, interact with and challenge oppressive regimes that curtail the freedom of the individual and compromise the rights of a people and the society; examining the potential that these spaces have to deal with conflict, terror, threats and discrimination that have arisen with globalisation; moreover, providing a framework to coherently chart the similarities and differences in the strategies and actions that different populations embodying the same identity deploy in response to their particular contexts.

Pedagogic³ Interventions: Looking at how the Digital Native identity forces us to revisit accepted concepts and ideas by the changes they induce in the value of information and the economy of knowledge production; examining the pedagogic potentials of networking, sharing, collaborating and learning in the new environments of ubiquitous information and exchange.

Livelihood: Looking at questions of innovation, access and engagement and how they affect Digital Natives in making the more obvious choices about livelihood and lifestyle, but also how the notion of livelihood and sustenance is affected strongly by new models of work and new currencies of value (like information, attention, etc).

1.3 Methodology

This Knowledge Survey was conducted in three parts:

Survey of Literature: A broad survey of literature drawn from different geographies was conducted, including scholarship, mainstream public discourse, policies, legislation, and various anecdotes and incidents in the broad field of youth and technology.

Consultations and Conversations: Some of the most influential scholars, practitioners and activists working in different areas of youth and technology were engaged in conversations.

Developing the Knowledge Framework: Conclusions, suggestions, ideas and projections were drawn from the survey of literature and conversations; principle knowledge gaps and the areas that need immediate research and intervention were identified.

1.3.1. Survey of Literature

The literature collected was published after 1992 – when the first debates over technology-mediated identities were initiated. Emphasis was placed on literature that emerged after 2001 – the year global information societies emerged and ICT infrastructure proliferated (Chong, Wenhong and Barry Wellman, 2004). To be included in the survey, literature was required to be motivated by an interest in either of the following areas:

- **Digital Native identities, activities, and roles**
- **Theoretical/conceptual understanding of technology-mediated identities**
- **Youth-internet relationships**
- **Internet technology in socio-political participation**

1.3.1.1. Typology of literature

Primary importance was given to literature published in the disciplines of social-sciences and cultural studies, and which has considerable influence in the contemporary understanding of Digital Natives and youth-technology studies. Academic journal articles in disciplines like media studies, Internet studies, Internet law, communications studies and other interdisciplinary areas have also been reviewed and included. The most vociferous public discourses documented in mainstream and alternative media as well as in anecdotes and memories were also included. Interventions in the field – attempts made by organisations and individuals that have successfully responded to the local and

³ Pedagogy refers not merely to classroom practices in educational institutions but to the larger practices of learning and sharing and the knowledge production industries that the digital natives are so integrally a part of. The emergence of a new technology not only changes the way in which we teach and learn but the very nature of learning. For example, peer-2-peer sharing of knowledge or a user-generated reference site like Wikipedia destabilises the earlier reference points of pedagogy and allows for new ways of understanding our contexts.

global crises – have been referenced. Responses from e-mail exchanges or conversations with experts and activists in the field have been assimilated and documented. The survey is divided into two parts: the first part dealing with the characteristics of Digital Natives as delineated in contemporary scholarship, and the second part focusing on technology-identity questions and providing a framework to understand the knowledge gaps in Digital Native identity scholarship.

1.3.1.2. Limitations

The literature survey, while it focuses on digital technologies at large, is interested specifically in Internet technologies. While scholarly interest in Mobile Natives and techno-social phenomena in the realm of Technology-Mediated Identity studies is growing, this survey does not address these areas. It would be erroneous to presume that these other technologies that have spurred mobile cultures and portable identities (Rheingold, 2001) would have the same implications for the Digital Native, which is specifically an Internet-mediated identity. This particular distinction also marks a strong departure from the ‘convergence theory’ that neglects the mechanics and the politics of technology and treats all technologies as equal and similar.

While particular effort has been invested in covering different parts of the world, unfortunately, almost all the literature included is in English. Therefore, this report does not cover the Francophone, Sinophone, Lusophone, Hispanophone and Russophone world.

1.3.2. Consultation and Conversations

There were a few factors that necessitated looking beyond existing literature and scholarship: lack of academic and scholarly interest and diminished sources of knowledge in the area, and the need to factor in differentials like age, gender, sexuality, governance, region and access.

The report includes responses from 12 different individuals, who have provided helpful insights, suggestions and leads that have shaped the report. Some of the conversations were in person and others by email.

1.3.3. The Knowledge Framework

The knowledge framework for Digital Natives and their socio-political engagement should help us understand in a nuanced manner the highly ambiguous and often contested term Digital Native. It was discovered that very little attention has been paid to the formation of this particular identity and, indeed, most discourse and scholarship either give a working definition of what it means to be a Digital Native or presume that it is an identity whose meaning is self-evident. The Framework was thus devised around a formulation of Digital Native identity to which several questions of political participation, social transformation, cultural mechanics, etc., could be posed.

The classification of the literature and sources for the knowledge framework was based on three different attributes: **region of origin/focus**, **type of literature**, and **area of focus**. Since not all of the resources compiled and surveyed for the Scouting Mission were equally important or productive, certain resources were identified as more significant based on their influence in contemporary scholarship and/or the synergy with Hivos’s mission.

2. Literature Review – Characteristics of The Digital Native

There is a growing body of literature within social sciences, cultural studies and interdisciplinary humanities⁴ that focuses on Digital Natives, producing very helpful case-studies and anecdotal and ethnographic data about the practices and lifestyles of Digital Natives. However, much of this work cannot stand the test of academic rigour or conceptual engagement. Various, scholars, researchers and practitioners, as well as popular media representatives, have invoked the phrase 'Digital Native' more as a descriptive term than an identity that needs to be studied and understood. As a result, much of the intervention and activism in the field has also suffered, owing to a lack of clarity about the identity and implications of Digital Natives in emerging information societies.

This literature review first maps the popular characteristics of Digital Natives that have been at the centre of all discourse in the field. Some of these characteristics are marked by euphoria – celebrating the difference and future potential – while others are rooted in alarm and concern about the dangers and pitfalls that interaction between youth and technology poses, not only to the young but also their surrounding context. Next, the review considers some of the most influential models of theorisation and conceptualisation from various disciplines that have contributed to the understanding of 'Digital Native', and offer a more nuanced way of dealing with their identities, rather than merely with their actions.

2.1 Digital Natives: The Criticism

In 2009, the oldest Digital Native⁵ turned 30 and the youngest has yet to be born (Turkle, 2000).⁶ Digital Natives are flooding universities, campuses, work forces and governments and are *expected* to bring about a radical restructuring of the world around them. There have been many ways in which this population has been defined, and it is through mapping the characteristics of these definitions that we structure this survey. What these characteristics are symptomatic of, and the questions they raise, shall be addressed later in this review.

The chief criticisms offered by theorists, parents, educators, governments, policy-makers, employers and older structures of socio-cultural authority are:

2.1.1. Ignorance and Dumbness

There is a general outcry from scholars that the typical Digital Native is basically dumb. Mark Bauerlein calls them 'The Dumbest Generation' and says they are jeopardising our future. He paints them as being in a state of constant distraction powered by multitasking and gadgets that demand their attention. Psychiatrist Edward Hallowell suggests that they exhibit, because of their scattered engagement with technology, symptoms that suggest attention deficit disorder. Teachers lament the copy and paste culture and students who refuse to read, write or even think on their own (Bennett et al., 2008), as Digital Natives increasingly depend on machines and networks to do their work. The Wikipedia culture of ready information access has caused much alarm regarding plagiarism and lack of rigour in research. All these alarms suggest that the digital native is necessarily ignorant or at least exists in conditions of information access that allow 'indiscriminate ignorance' (Bauerlein, 2008). Matt Hanson points out that there is an 'infantilisation of existing media forms' that the Digital Natives revel in – using multimedia cameras, digital publishing tools, digital photo editors, etc. Digital Natives are

⁴ Other academic disciplines as well as corporate and businesses have also contributed to the literature in this area. However, given the immediate concerns of the Scouting Mission, literature from these was excluded from this survey. It is possible that a different kind of information might be available from research and surveys conducted by media companies, businesses, and corporate houses that are also gearing up to cater to the Digital Native as a potential consumer. Literature that develops a critique of the consumer paradigm has been included in this survey.

⁵ If we agree that the phrase refers to a population born after the 1980s (Palfrey and Gasser, 2008).

⁶ Sherry Turkle rightly reminds us that biotechnology and the intervention of digital technologies at the level of cellular design and reproduction are also designing Digital Natives, which are never a part of popular discourse.

able to take some of the most reverential tools of technology and use them to almost inane ends on an everyday basis.

2.1.2. Addiction and Poor Social Skills

In 2008, China recorded its 100 millionth Internet user and also witnessed the death of a 13-year-old Digital Native who, after two days of non-stop gaming, jumped off an elevator to 'meet another character from his game'. Chinese reports suggest that the gaming environment led him to a state of hypnosis where he could not make a distinction between his physical reality and his digital fantasy. Immediately following this, China opened its first Internet rehabilitation clinics, identifying Internet addiction disorder (IAD) as significantly affecting young people's mental growth as well as their social and interpersonal skills. Many groups have actively protested against the growing 'networkedness' of the young. The online satirical group Mothers Against Videogame Addiction and Violence (MAVAV), for example, consider how several groups cite Internet addiction as analogous to alcohol and drug abuse. Urs Gasser and John Palfrey (2008) identify this problem as one of information overload. Given their poor concentration skills, Digital Natives also experience more social time and public spaces mediated by their screens. This phenomenon of evolving 'screenagers' (Tapscott, 2008) has driven many countries, like Thailand, Vietnam and South Korea, to 'rehabilitate' the young's healthy living practices.

2.1.3. Confessionals and Privacy

More and more, Digital Natives are experiencing the Internet as a fiercely personal (and customisable) and radically public space. In the process, they are dismantling the boundaries between the public and the private (Livingstone, 2005) and often putting themselves in grave danger, not only in their immediate present but also in their unsuspecting futures. The Internet's capacity to archive identities in a way that permanently records everything ever expressed online (Weinberger, 2007) often leads to embarrassing stories and personal information being laid bare to public scrutiny. In India, the stories of 'Orkut Deaths'⁷ (see box) (Shah, 2007) showed how morbidly individual users and mainstream media consumed private lives and public affairs. The Web 2.0 explosion has resulted in more young people publishing their private activities and information online, leading to unforeseen dangers. While Digital Natives have been made increasingly aware (Prensky, 2004; Jukes and Dosaj, 2004; Gasser and Palfrey, 2008), through experience and exposure, of the dangers of such revelations, they still rely on previous generations and shared peer knowledge to navigate online worlds safely. Despite having knowledge and information, the lack of online warning signs often cause Digital Natives to forget their online safety and privacy rights – a phenomenon that Mayer-Schoenberger calls 'the art of forgetting in the age of ubiquitous computing'. Even now, as companies become more sensitive to data usage and privacy, it is quite alarming how close we are to living in a 'Database Nation' (Garfinkel, 1992), where all our activities leave traces and residues beyond our control.

2.1.4. Self-centredness and Self-importance

It is in the nature of online trust (Nevejan, 2008) that the Digital Native, through his/her transactions, becomes the centre of his/her own universe. Nevejan suggests that in order to generate trust and successful transactions, individual users in an online environment need to repeatedly assert themselves via new narratives and avatars. Add to this the ability of selective searching (Ego-surfing is an example), and we can grasp how a Digital Native might think of the entire world as revolving around his/her self. The recent explosion of news feeds on sites like Facebook, or the use of Twitter to create social networks, or blogging in echo-chambers (in Howard Dean's coverage of the 2004 US presidential campaign), often gives the young Digital Native an inflated sense of self. In China, this phenomenon is seen in the emergence of 'little princes' and 'little princesses' who think of themselves as unique and deserving of the best without having to invest any effort. The myriad tools that Digital Natives have for finding like-minded persons leads to a sense of intense self-gratification (Shah,

⁷ In 2007, the Indian mainstream media went into a frenzy over two tragedies that happened in almost the same time-frame and were dubbed 'Orkut Deaths'. Orkut is a social networking site that allows users to build digital 'scrapbooks' and to communicate via 'scraps'. Owned by Google, it has been extremely popular with users in India. The first case involved a young woman – Koysheembi Layesk – who worked for an IT company. On a train ride, she crossed paths with a man who she got to know better on Orkut via public scraps and testimonies, and eventually fell in love with him. Koysheembi eventually realised, after a few months of intense and intimate scrapping, that the man was married and stopped all communication with him. In a fit of anger and frustration at the rejection, the man hunted her down and shot her dead before killing himself. He left messages of grief, bereavement, anger and revenge on her and his own Orkut scrapbooks before the actual killings. The history of their entire relationship and its sad ending was available for scrutiny to anybody who cared to browse through their profiles. The second case concerned Adnan Patrawala, a 16-year-old boy who via Orkut was lured by a stranger who eventually kidnapped and killed him. Both these cases drew great public attention, spurring 'an ecology of fear' across the Internet regarding its potential abuses. Like other reported cases of cyber bullying or hate speech, victims and perpetrators were all Digital Natives whose lives, motives and actions were exposed to public scrutiny. These cases became pivotal for certain activists who demanded the censorship of and shutting down of the country's social networking sites.

2005). It also provides a dangerous outlet for violence against themselves and others, as they find validation for their actions within that group without having to face any protest or conflict – what Loren Coleman (2007) calls the ‘copycat effect’. In Russia, for example, groups of teenagers create scenes of racial violence, upload them online and inspire other groups to perform such actions. In Japan, this results in mass suicide by young people who see themselves as socially marginalised. Across the world, school and campus shoot-outs involve young miscreants directly influenced by video games and violent acts online (Anderson, et al.).

2.1.5. Digital Piracy

Young people steal.⁸ This seems to be an almost universally accepted motto of rights-holders. With the rise of peer-to-peer networks and file-sharing systems coupled with increasing broadband speeds, Digital Natives pirate proprietary information and share it across the Internet (Strahilevitz, 2002). Despite strong lobbying from the cultural and entertainment industries and demands for strict legislation, Internet piracy has not decreased. In historic cases like Napster, or the current battle waged by thepiratebay, the music and film industries seek to control technologies, like peer-to-peer, in an attempt to hold on to pre-digital notions of intellectual property. The voices against Digital Natives and their ability to bypass legal systems of ownership have caused alarm and sparked interest. Major campaigns that seek to ‘educate’ the Digital Native about the ‘wrongness’ of their actions have been initiated across the globe. These claims of theft ignore the conditions of innovation and livelihood, engagement and consciousness (Abraham, 2009) that pirate networks promote.

2.1.6. Plagiarism and the Digital Classroom

In education systems, where the majority of the Digital Natives are enrolled, the controversy takes on a different tone, emphasising plagiarism and increasing intellectual property theft, as a result of students adopting cut-and-paste practices (Baker, et al., 1997). In many ways, the terms of the debate are almost the same as those invoked in digital piracy arguments, as plagiarism very clearly entails questions of intellectual property, attribution and appropriation of ideas. The ability of the student to bypass existing safeguards of research ‘ethics’ has divided networked university campuses (Ostertag, 2008).

The second set of arguments regarding Digital Natives and education revisits the role of the instructor, the function of the classroom and the needs of students. Calls for digital infrastructure in academic institutions and for the digitisation of curriculum and pedagogic practices have proliferated; what they promote also entails the training of existing faculty members and dramatically re-engineering the ways in which we understand teaching (Benett, et al., 2008).

2.1.7. Consumers rather than Citizens

There is a growing lament that younger generations are chiefly concerned with gratification, and are consumers without much awareness or sense of their political and social environments. Chua Beng Huat (2002) observes how, in spaces of global consumption like Singapore, consumption has become, for young adults, a way of enacting citizenship. Lance Bennett (2008) identifies this generational shift as transitioning from a ‘Dutiful Citizen’ to an ‘Actualising Citizen,’ the latter favoured by Digital Natives. Bennet suggests that Actualising Citizens have a consumerist relationship with the state, through which they demand new forms of governance and accountability in place of performing civic duties. Audrey Yue (2005) demonstrates that this consuming citizen is often apolitical and prefers to remain in the realms of culture and entertainment rather than engaging with active political and social concerns. Examples include public sex orgies called Ponceo, in Chile, where young adults gather in public to engage in hours of sexual experimentation, and young people in Russia who photograph dare-devil encounters, such as sleeping under a passing train, to impress their online peers

Asha Achuthan (2009), in her on-going research at the Centre for Internet and Society, Bangalore, argues that new digital technologies have marked a generational shift from the aesthetics of

⁸ Debates rage over the notion of stealing and copying, especially within the entertainment industry. The World Information City hosted in Bangalore in 2004 succinctly asked: ‘If the original still remains intact, why is it called stealing?’ The conflation of copying and stealing has led to debate among entertainment industry stakeholders and Digital Natives. Sebastian Lutgert of ‘Pirate Cinema’ in Berlin suggests that the entire vocabulary of ‘piracy and stealing is a new creation’ and we need to examine when these activities were not in violation of the law. Shaina Anand, who runs India’s first free annotated video archive PADMA, explains how ‘stealing is an unconscious choice...digital natives who have grown up with the copying cultures are not always conscious of their own decisions.’ Various activists like Lawrence Liang and Lawrence Lessig, and the teams working at isohunt.com and thepiratebay.org (see bibliography), have many nuanced takes on how the law attempts to control identities beyond its immediate ken by regulating certain activities.

'representation' to those of 'simulation'. Historically tracing the tropes of technology-mediated studies, she suggests that examinations of the Digital Native identity through the theoretical lens of representational politics often fails to capture the mechanics and politics of how a new generation is using different tools. Scholarship from the fields of computer-human interaction and robotics supports this position. Brenda Laurel, as early as 1990, suggested that the way we understood our world as mediated by represented technologies was going to be completely changed by the rise of new digital technologies. Kevin Warwick, the first self-proclaimed human cyborg, in 2004, demonstrated through a series of experiments on his own body how our understanding of human experience and knowledge is questioned by the way in which Digital Natives relate to the technologies around them.

2.2 Digital Natives: The Applause

Not all discourse around this growing population is so grim. Indeed, all these points have now found productive resolutions and defences, which we shall discuss later in the report. Moreover, some uplifting stories about Digital Natives have captured the popular imagination, and while they often err on the side of 'wishful thinking', they do offer great insight into the identity's future possibilities and potential.

2.2.1. The Values of Freedom

The rise of the blogosphere has indeed been predicated on Digital Natives' attempt to reclaim a public space for expressing support of ideals of freedom, justice and inclusion (Notaro, 2006). Michael Stanat (2005) observes how in China, Generation Y is opening up not only to a world of globalised consumption but also to cultural diversity and acceptance. Groups like 'Reporters Without Borders' and 'Global Voices' have offered space for alternative perspectives and opinions to be shared by young people around the globe. In Vietnam, a small group of progressive bloggers have created the only visible civil society movements in the face of government bans on free speech (Hoang et al., 2009). In times of conflict and emergency, Digital Natives have made innovative use of digital tools to circumvent online censorship mechanisms and provide first-hand accounts of things as they are. In India, the ban on popular blogging platforms like Blogspot.com led to a vast mobilisation of bloggers and activists who demanded their right to write (Vij, 2006).

2.2.2. Promoting Tolerance and Co-existence

In oppressive regimes and authoritarian geo-political contexts, Digital Natives have discovered Internet tools such as blogging, social networking, and user-generated content sites and broadcasts. Ravi Sundaram (2005) calls these formations 'cyberpublics' – new arenas of public opinion-making and dissemination that create the conditions for promoting tolerance and co-existence. Taiwan saw the rise of Kuso videos and lifestyles as a form of collective sub-cultural protest by the Strawberry Generation against its political leaders (Shah, 2009). In recent times, a protest against the regressive and violent attacks by right wing political organisations on women in Mangalore, a 'Pink Chaddi (panty)' campaign, chiefly organised by activist Nisha Susan, induced more than 50,000 people across India to protest and join the innovative demonstrations. Michael Suk-Young Chwe (2006) argues that though this might seem to be a 'passive' position, a public ritual like this is a 'social practice that generates common knowledge.'

2.2.3. A Call for Diversity

The rise of Digital Natives goes hand-in-hand with demands for diversity, equality and fairness, often voiced by Digital Natives who are pushing their own boundaries of knowledge and experience thanks to global connectedness and friendships. In the case of gender and sexuality politics especially, worldwide mobilisation has occurred to demand equality, acceptance and justice for sexual minorities. In India, the Internet was the venue for the 'Voices against 377', a coalition demanding the decriminalisation of homosexuality in the country (Naaz Foundation Report, 2007). In Hong Kong, the first online queer television channel (Denise Tang, 2006) has led to significant de-stigmatisation. In more restrictive regimes of the Middle East, women have formed support groups and communities (for example, the OCSAB, or Official Community of Saudi Arabian Bloggers) and are slowly initiating subcultural forms of protest and liberation. Historically, student communities across the globe have been the most politically active and engaged, while digital technologies and Internet spaces have given rise to new tools against imperial structures, unfair politics and government corruption (Banerjee, 2007).⁹

⁹ The structures of online trust and belonging can also very easily be manipulated and many counter-attacks or obstructions can emerge from within these groups. The easy availability of sympathetic supporters can lead to the danger of 'preaching to the choir', as was demonstrated in the Howard Dean story.

2.2.4. Finding Collaborators and Innovators

Perhaps it is because of the tools and means at their disposal, but there is no denying that Digital Natives are now connected in a most fruitful collaboration. Their online social networks, gaming, blogging, news feeds, arts, hobbies, etc., are not merely a replacement for face-to-face social conversation. They also harness the knowledge of groups (Howe, 2009) in order to gather and produce information and knowledge in unprecedented ways. The rise of user content in Wikipedia and YouTube are testimony to the power of the young to create collaborative environments for learning and sharing, and to use collective computing and knowledge innovatively (Rheingold, 2002). These young people are orchestrating new economies, values, currencies and businesses that are radically restructuring the earlier post-industrial forms of employment and production, replacing them with new sources of cultural wealth and engagement that lead to the creation of new livelihoods, agencies, and economies. Yochai Benkler (2006) looks on these networks as the new wealth of nations. Clusters and collaborations are regarded by Body and Ellison (2007) as leading to new kinds of community and social knowledge and memory that translates into new models of business and interaction among Digital Natives. Digital Natives are also producing a systemic change in patterns of learning and education (Ito, 2006; Davidson, 2008) by establishing systems of peer review, collaboration and the sharing of resources that enhance and augment their classroom learning and participation.

2.2.5. Mobilisation and Participation

Tools of social networking, group messaging and self-publishing unhindered by mainstream media filters have provided Digital Natives with novel forms of group mobilisation that encourage participation through ease of access. Events like flash-mobs and localised campaigns show Digital Natives operating dialectically between the digital and the physical, leveraging the strengths of one space to augment the efforts in the other. We are already witnessing a synergy between the virtual and the physical, and overlapping of one by the other. The employees at IBM Italy demonstrated the power of Internet technologies to help them organise and unionise, when 9,000 of them, representing the labour trade union at IBM-RSU, went on strike, online, in Second Life (The Register, 2007). After the horrifying tsunami that devastated parts of South and Southeast Asia, activists such as Peter Griffin and Dina Mehta, along with local bloggers, were able to mobilise resources, assistance and aid long before NGOs or governments could do so.¹⁰ In Thailand, the Save My Planet Group runs a successful and effective campaign against global warming, attracting young school children and university students with music videos and songs distributed online. In India, a series of flash-mobs (Shah, 2007) initiated an awareness-building campaign regarding globalisation and urbanisation in Indian cities.

2.2.6. Information Dissemination & Political Engagement

Digital Natives have already begun to realise the potential of the tools at their disposal. Just as they turn to the Internet for their information needs, so do they for organising campaigns, petitions and demonstrations.¹¹ Here it is necessary to distinguish between two kinds of online participation and mobilisation. There is a certain ease to playing off someone's guilt in exchange for passive participation, when, for example, Digital Natives limit themselves to clicking on buttons or signing online petitions that produce no real impact. However, in a very material sense, the use of online campaigns, petitions and demonstrations in tandem with a physical project has proven very effective. In India, during the 2009 elections, the high turnout of first time young voters was attributed to campaigns such as Jaagore and voteindiareport. In the Philippines, in 2001, President Joseph Estrada became the first head of state in history to lose power to a smart mob. In China, in 2009, Digital Natives circulated videos of atrocities suffered by Tibetan monks at the hands of the Chinese military, which led to the government's subsequent banning of YouTube. In Burma, a group of young Digital Natives set up roaming, free and anonymous web access to overcome the information blackout imposed by its government during the monks' protests. In Brazil, in 2008, a flash-mob successfully challenged the Digital Crimes law. In Egypt, in 2008, cyber-dissidents used popular digital sharing platforms to voice their critique of the inflated economy in the country.

The recent political movements in Iran, which are now being dubbed 'The Twitter Revolution' (Berman, 2009), showed how effectively micro-blogging and other peer-to-peer networking tools circumvent authoritarian regimes and bypass information firewalls to spread news at the local level and mobilise large communities for political action. The Twitter Revolution, in which Digital Natives

¹⁰ Interestingly, these activities are not confined to Digital Natives. In some of these instances, the Digital Natives were catalysts for much larger community movements, while in others they were supporters who created innovative ways to promote and aid already existing causes and movements. What these activities have in common is that they have been able to involve Digital Natives in creative ways to work towards desirable change and political engagement.

¹¹ This particular trend has faced great criticism, unkindly referred to as 'slacktivism' – feel-good online activism that has zero political or social impact. Evgeny Morozov offers a passionate defence available at <http://www.npr.org/templates/story/story.php?storyId=104302141>.

acted as mobilisation and information hubs and disseminated what the mainstream media could not cover, is an ideal case study.

IRAN'S TWITTER REVOLUTION: MULTIPLE PERSPECTIVES

On the one hand, cyber-celebrators have proclaimed it 'The Twitter Revolution', attributing its success to Twitter. On the other hand, detractors like Kariem Friedman emphasise that Twitter did not replace mainstream media but rather transcended the regime's barriers to mainstream media and information access. In an online discussion, Barry Welman and Geert Lovink acknowledge that Digital Natives played an important role, but they also assert that the revolution was all-inclusive and that its success was not determined by a particular group of digital users. Digital natives, migrants, settlers and outsiders all collaborated to create a synergy that resisted the autocratic regime.

Cory Doctrow, who wrote the 'Cyberwar Guide for Iran Elections', also demonstrates how the rise of information networks has translated local and national crises into global phenomena that attract the attention, support and participation of people who are not in the same geo-political contexts but have similar goals. Warning against getting carried away by the event's techno-euphoria, Christopher Rhoads and Loretta Chao (2009) demonstrate how the same technologies also aid and abet authoritarian governments in identifying protesting individuals and communities, cracking down on subversive activity, and eliminating people and organisations they see as a threat.

Finally, Megan Carpentier examines the gendered nature of protest and the engendering of protest politics even among Digital Natives. Writing for Jezebel, she notes the 'pretty' women who have been so visually present in the protest movements. 'When you see a woman with a tunic above her knees, red fingernails, an extremely loose headscarf and a protest sign, try to look beyond the 'pretty'. Those things are also a symbol of what an Ahmadinejad regime would deny (and, in some cases, has denied) her the right to be.'

The Iranian election protests and subsequent activity also brings into sharp relief the geo-political context that determines and defines the activities of a Digital Native generation. As a new generation becomes aware of the information landscapes in which they live, increasingly, such tools are going to be pivotal in times of political crisis.

2.2.7. Cultural Production and Interventions

The availability of digital technologies of cultural production and platforms to distribute and share them have led to the significant contribution of Digital Natives to the realms of cultural production. Apart from the experiments and innovation that the artistic community around the globe has been initiating in their adoption and engagement with digital technologies, there is also a large group of cultural producers who serve as intervention and opinion makers. Digital Natives, with their understanding of technology, are able to distort, manipulate, leverage and exploit the new aesthetics to produce astonishing results. Viral videos, user-generated pictures, fan-fiction, subversive blogs and parodies have populated the digital imagination of the last decade. While many of these creations seem to be self-contained or gimmicky, they have a socio-political edge and a potential for mobilisation and activism.

In China, the self-censored Baidupedia – a user-generated Wikipedia-like encyclopedia – was 'vandalised' by subversive youths who opposed China's censorship policies and created 'ten Chinese legendary obscene beasts', which bypassed the moral censorship filters but also opened up a space for political mobilisation and negotiation in China.¹² Matt Harding, who created the viral video 'Where the hell is Matt?', demonstrated how, just by having 'fun', thousands of people can be mobilised and brought together.¹³ In India, bloggers like Krish Ashok created the 'Facebook Mahabharatha'¹⁴ not only to entertain but also to bring to the fore questions about writing histories and legends. In his irreverence toward the 'sacred' text, with which Hindu Right Wing political parties justify communal

¹² The BBC report on Baidupedia is available at <http://news.bbc.co.uk/2/hi/asia-pacific/4761301.stm>.

¹³ The official website gives the full history of this raging internet phenomenon: <http://www.wherethehellismatt.com/>.

¹⁴ The Facebook Mahabharatha can be viewed, along with explanations on how it was made, at <http://krishashok.wordpress.com/2007/11/29/facebook-mahabharatha/>.

violence, he reminded us that the text is just that – a text. Using editing and mixing software and exploiting the digital copy, Digital Natives are engaging with the socio-political landscape through these new processes of cultural production.

The characteristics of the Digital Native, while not always concrete, definitely provide broad strokes with which to define its identity. While the data is often tainted by celebratory or alarmist intent, it is still adequate and demonstrative enough for us to realise that while the Digital Native might still not be an all pervasive identity, it is still an emerging identity and needs to be mapped and understood in order to plan for the future.

2.3 Voices against Digital Natives

Many critical voices caution against presuming that all those born after the advent of the Internet are Digital Natives. Noel Selegzi at the Open Society Institute (OSI)-Youth Initiative suggested:

'To try to argue that every kid who was born after the invention of the Internet is a Digital Native...is a mistake. The vast majority of youth living in the global south are not digital natives in any meaningful way. The most you might be able to argue is that they are mobile natives, since it does seem that mobile phones have become nearly universal. There is enormous potential right now to harness mobile technology for development.'

Selegzi's suggestion is indeed the reason why we are looking not only at Digital Natives but also at youth-technology relationships where digital settlers and immigrants are equally the agents of change and are significantly affecting the digital landscapes and technology-mediated environments we live in. Hernan Bonomo, also at the OSI and involved in its Youth Initiative, complicates Selegzi's argument by reminding us that Digital Natives comprise a very small elite minority of the global population. Bonomo, alluding to South and Latin America and drawing from his project 'idebate', informs us that 'there is indeed a serious gap in access to information and knowledge in Latin America.' The democratisation of information and access is important, but there are also some very real hurdles experienced by the young when trying to engage with technology. Local, regional, geo-political and cultural filters often restrict the young's engagement with technology, and must be factored in when trying to define the Digital Native. This makes it a contextual, rather than universal, category.

Siva Vaidyanathan, a professor at the University of Virginia, in his recent essay 'Generational Myth: Not All Young People are Tech-savvy', also criticises the way in which many scholars, including John Palfrey and Urs Gasser at the Berkman Centre for Internet and Society, have defined the Digital Native. Vaidyanathan, drawing from his own experiences in and out of classrooms and university campuses, says that Palfrey and Gasser make

'...assumptions (that) bolster the policy positions that they have...already embraced: that the law should allow young people to remix and share bits of culture, while helping them respect and manage privacy. The policy goals are laudable. And the research is interesting. But Palfrey and Gasser did not need to render young people exotic to make their points. The concept of "born digital" flattens out the needs and experiences of young people into a uniform wish list of policies that conveniently matches the agenda of digital enthusiasts and entrepreneurs of all ages. Indeed, it is interesting that Palfrey and Gasser deny that their subjects constitute a "generation," conceding in their introduction that they are describing only the challenges of privileged young people.'

While Vaidyanathan's critique of *Born Digital* remains to be examined for its validity, it discourages embracing the identity of the Digital Native unthinkingly. Vaidyanathan echoes the sentiments and observations of many other educators and thinkers in the field: essentially, that the Digital Native is at best a hopeful imagination of young adults in the future, and at worst an unproductive and false category focused on the exotic and unique rather than the typical and widespread.

Sue Bennett, Karl Maton and Lisa Kervin, of Australia, in their report 'The "Digital Natives" Report - a critical review of the evidence', also endorse Vaidyanathan's position quite strongly. They suggest that the creation of the Digital Native identity in academia is marked by a 'moral panic' that conjures

Digital Natives as having skills that current educational systems are unable to cope with. The report argues that 'rather than being empirically and theoretically informed', a false alarm surrounds the discourse regarding Digital Natives in schools and universities. They call for measured, disinterested and 'theoretically informed' research on Digital Natives before making policy or regulatory recommendations.

3. Analyses and Assimilations

The literature survey charts out the most influential and popular positions in scholarship and ideas in the areas of youth and technology, especially dealing with Digital Natives. Hivos is particularly interested in the systemic changes that these Digital Natives, as e-agents of change, induce in their socio-cultural and political environments. We formulated a list of questions to inform Hivos's broader agenda, which helped us identify the research agenda in this area as well as the principle knowledge gaps that need to be addressed. This section is divided into three parts: the first lists these questions and an assimilation of information and knowledge that is clustered around these questions; the second identifies the knowledge gaps based on the analyses of the surveyed literature based on the focus of this Report; the third looks at the next steps as recommended by activists and practitioners in the field.

3.1 Framework Questions and Findings

The assimilation of knowledge framework questions and findings is pinned to the focus area of literature surveyed. For each particular focus area, a set of questions is posed and subsequent findings are listed. These framework questions offer the *raison d'être* of the knowledge gaps identified in the subsequent part and also details the focus with which this survey was conducted.

3.1.1. Digital Native Identities, Activities and Roles

What constitutes a Digital Native identity?

Existing literature and scholarship offers no definite answers to this question. Most of the literature provides a working definition of a digital identity – children born after the 1980s; young people whose lives are significantly affected by the rise of Internet technologies; an emerging part of the global population that has grown up with digital technologies central to everyday functioning. There has been no attempt to provide either a theoretical understanding or a serious expostulation of what a Digital Native identity can mean. The general trend is to delineate what Digital Natives do, or to draw characterisations from surveying small and selective samples, neither of which are effective ways of understanding this emerging identity.

And yet, there is an increasing amount of anecdotal and scholarly evidence of a generation that relates to digital technologies differently and that is living its life in a markedly different way from that of preceding generations. Much like print technologies, the rise and emergence of digital technologies seems to be producing new citizenships, forms of governance and public spheres of which these technology-mediated identities are a component. Scholarship that pays attention to this sense of difference is rare. Most scholarship seems to rely on novelty and newness as the source of the difference, without actually interrogating the mechanics and politics of such an identity. The discussions around Digital Natives and their presence/growth eventually devolve into questions of infrastructure-building, safety and education, without adequate theorisation of the identity itself.

How do we understand the Digital Natives as e-agents of change?

Even though scholarship on the 'identity politics and constitution' of Digital Natives is limited, there is an incredible amount of anthropological and sociological work done on Digital Natives as e-agents of change. Across geographies of information and culture, there is constant alarm that the Internet and its collaborative potential are severely underused by youths that remain apathetic to political participation or engagement. The few examples that do surface about youths' active engagement with the geo-political and socio-cultural contexts serve more as exceptions rather than rules.

However, we believe that this alarm rises from two factors. The first is the evaluation of the activities of Digital Natives based on a pre-digital understanding of politics and engagement; the second is the concentration on actions rather than on the conditions of change that Digital Natives are creating and in which they are maturing. A few works that have overcome these limitations have successfully demonstrated how new forms of agency and empowerment are being created and appropriated by Digital Natives in their everyday relationships with Internet and communication technologies.

3.1.2. Theoretical/Conceptual Understanding of Technology-mediated Identities

What are the factors that bolster our understanding of technology-mediated identities?

The survey revealed the existence of a certain image of the technology-mediated identities in general, and the Digital Native in particular, as an almost disembodied identity, without any of the factors or differentials that abound in contemporary scholarship. Some of the more interesting ideas on contextualising Digital Natives come from unusual sources like studies in post-human identities, robotics and the philosophy of science. The few works that have been included from these disciplines indicate that the following key influences need to be factored into the understanding of a contextualised Digital Native identity:

Gender and Sexuality: Not only are technologies gendered but they also create and produce gendered practices and politics of visibility, labour, independence and participation. The nuances of the gender and sexual roles and identities of Digital Natives need to be understood as a part of their larger gender paradigms.

Class: There marked differences in the reasons Digital Natives from different classes interact with Internet technologies; they might seek socio-economic mobility, entertainment, cultural production, dating, livelihoods. There are no universally shared practices and the affective values that these technologised spaces have for different classes need to be understood in order to grasp the common identity markers and points of departure.

Language: The hegemony of the English language online and in most digital media (despite major efforts at translation) imposes top-down identities and practices that might not only cause insidious damage to the local but also be counter-productive to existing efforts at the ground level. Technology propagation and literacy are tied to the politics of language, and the effective localisation of technology helps us understand the varied identities that are being collated under a Western-English-speaking notion of Digital Nativity.

Socio-cultural Indicators: If we accept the working definition that Digital Natives are people whose lives are significantly affected by the rise and ubiquitous use of digital aesthetics and technologies, then we need to qualify (and perhaps quantify) their 'significance' by looking at the socio-cultural indicators within which these identities develop. The significance is a point of departure and a space of transition, which might be different for different groups and needs to be factored into our understanding of this particular identity.

Geo-political Status: Certain kinds of resistance, negotiation or subversion – political manoeuvres and strategies – are responses to changing local environments. Such local or regional movements might not have universal significance or up-scaling possibilities. Because they do not fit the global paradigms of digital activities and engagement, they are often rendered invisible or ignored as trivial. However, looking at specific geo-political contexts of different movements and identities helps us understand the potential and characteristics of Digital Natives in the region.

3.1.3. Exploring Youth-Internet Relationships

What new structures need to be developed for the young to emerge as active stakeholders in technology-mediated developmental changes?

It is evident from the opinions of experts in the field that there is no need to search for new structures that will 'empower' the young in their relationship with technology. Their consensus is that while it is necessary to look at the question of the last mile and invest in infrastructure to bridge digital divides, that alone is not a solution. Instead of constructing new structures, it is necessary to look at the existing powers and potential of various digital spaces and technology-driven social applications with which Digital Natives are in tune. Simultaneously, an emphasis on convergent and accessible technologies, open and unlicensed technologised platforms, and the creation of public repositories of knowledge and information are crucial to amplifying the effects of these existing digital spaces and applications.

Who are the stake-holders in the youth-technology paradigm playing an important role in shaping youth-technology relationships?

Stake-holders in the area of youth-technology and change, and their different roles, have been identified, thus existing scholarship (which is very scattered) and interventions (which are still disparate) can be consolidated to formulate strategies and policies for development organisations in the South.

The Government: Governments have different approaches towards ICTs, depending on their resources and aspirations. However, almost everywhere across the globe, governments have accepted ICTs as a panacea for many problems. However, the rhetoric of becoming S.M.A.R.T. States (Simple, Moral, Accessible, Responsive and Transparent) quickly subsumes the costs that these apparently simple ideals and transitions entail.

The Educators: Instructors and educators, while they are not Digital Natives, play an important role in the active engagement and participation of Digital Natives in their immediate environments. The terms of the debate over Digital Natives and education are not entirely useful. The most active discussion concerns whether the classroom situation, pedagogic methods and curricula and evaluation patterns of a previous era are redundant when dealing with Digital Natives. However, studies have shown repeatedly that change does not need to be addressed in terms of values or civic duty. The tools might have changed but the thinking that informs these tools still perpetuates and evolves.

The Market: Some of the most innovative and prophetic experiments and changes are taking place in the market economies that Digital Natives have spawned and in which they are central players. Apart from corporate and corporate-like structures that have become global powers, many ideation engineers and social designers are part of the informal and often invisible sectors of ICT development. Very little detailed and comprehensive data is available about the different parallel structures, such as attention and gift economies, virtual currencies, the wealth of networks and collaborations, that many Digital Natives are engaging. Just like the state and the public, the market is also changing shape and is becoming deeply involved in the governance and regulation of these new spaces and populations.

Civil Society Organisations (CSOs): Many of the CSOs working in the field of youth and technology are already aware of the challenges they face in coordinating and harnessing the power of the young for particular causes. Training and education of CSO workers in new forms of crowd sourcing and mobilisation, and building their awareness of how youths relate to technology, might go a long way in infusing new life into many programmes that otherwise seem to be losing out to the charms of new digital engagements.

Digital Natives: One of the most important changes that Digital Natives have induced is the demolition of earlier hierarchies. With the ability to organise and network at almost no cost, and using innovative ways to do so, Digital Natives no longer want to be 'subjects' of inquiry and research. With an aesthetic of playfulness, irreverence, and a collation of the terrains of the cultural and the political, Digital Natives have often demonstrated their new aesthetics of political participation, cultural consumption and social transformation.

3.1.4. Documenting Role of Internet Technology in Social Transformation and Political Participation

What are the changes produced by the emergence of Internet technologies and technology-mediated identities in developing information societies?

Even as the rhetoric of the Internet as producing global and superficial selves gains currency, there is a very strong contextualisation and 'domesticisation' of Internet technologies and applications within different regions. The advent of mobile technologies and portable computing devices has further fuelled the creation of these digital borderlands where youths are able to engage with technologies at a very intimate and local level while drawing from the paradigms of the public and the global.

The systemic change in the history of technology interaction and social application is not so much in 'novel' forms of engagement or participation, but in re-visiting the local with a sense of adventure and playfulness that no other technology has ever allowed. The ability to publish, create cultural products, mobilise local resources, promote causes regarding community-based issues, and build new forms of socio-cultural relationships has led to a systemic change: Digital Natives – generally posited as hyper-territorial and global – have become fiercely local and embedded in their contexts. Their 'local', however, is also global, because of the reach and the collaborative networking model of the Internet technologies they use to mediate it.

While there is some justification for the alarm that many activists and scholars have expressed, it concerns mainly, according to our findings, Digital Natives' level of activity: Digital Natives neither perform the same kind of socio-political acts nor engage with the same cultural terrain as previous generations. However, it would be erroneous to dismiss their activities as trivial or unimportant, because often their frivolous seeming activities provide conditions of change that cannot be immediately foreseen.

3.2 Principle Knowledge Gaps

The body of research and scope of interventions concerning Digital Natives is slowly growing. Often, the scholarship and interventions do not deal directly with Digital Native identity but are involved in either youth-technology or technology-mediated identity politics that corresponds to the concerns of Digital Natives. We would like to point out that as a term, 'Digital Native' often becomes restrictive and subject to suspicion because of its elitist and narrow definitions. Because 'Digital Native' places more emphasis on the digital paradigm rather than the socio-cultural and political milieu, it often comes across as exclusive and limited in its scope. While some researchers and activists have started using the term and made it popular, many respondents from Africa, Latin America and Asia confessed their unfamiliarity with the term and were reluctant to use it in descriptions of their work. We suggest that the nomenclature needs re-thinking and offer, 'Natively Digital' or 'Digitally Native' as options that indicate contextual, techno-social implications.

Despite the reservations and problems with the term itself, we sense excitement and interest in this technology-mediated generational identity. This section draws from the survey of literature and assimilation of the framework questions to list the principle knowledge gaps that need to be bridged, both in research and scholarship on Digital Natives and intervention tools and methods.

3.2.1. Vocabularies and Frameworks

One of the reasons for the ambiguity and the lack of empirical and theoretical work that clearly explains and elucidates the Digital Native identity is the lack of vocabulary and a framework to address the identities and actions of this growing population. Digital Natives are studied and discussed using vocabularies and ideas that do not belong to their contexts and have emerged from earlier technology paradigms. Most scholars and policy-makers still struggle to find frameworks that can help them understand the mechanics, politics and aesthetics of Digital Native identity. Serious, multidisciplinary theoretical approaches that venture beyond the cause-and-effect model and provide the necessary vocabulary and sensitivity are crucial to understanding this identity.

3.2.2. Particular rather than the Universal

A certain universal determinism in most scholarship and conceptions of the Digital Native ensues partly owing to the lack of conceptual tools and partly to the rhetoric of homogenisation and globalisation within which this particular identity is constructed. It is necessary to promote research that grasps that not all Digital Natives are equal. Each context will have certain norms by which digital nativity is understood and experienced. Dismantling the universal Digital Native and considering contextualised Digital Native identities might also help us move away from speaking of the Digital Native as a necessarily elite power-user of technology and understand the identity as a point of departure from earlier technology-mediated identities within those contexts.

Moreover, this makes us aware of how, even within seemingly homogenised and uniform spaces, Digital Native experiences and identities can differ. We suggest looking at Digital Native identity as a metaphorical identity. Individuals experience it differently based on their contexts. New research must be encouraged.

3.2.3. Digital Natives in Education

One of the fields in which the discourse on the Digital Native has been most voluble is education. Various organisations and individuals have focused on Digital Natives and the changes their interaction with ICTs induce in existing pedagogic and learning environments. Research that can explain the changes, not only in the role of Digital Natives and their learning practices but also in the role of the instructor and the educator and the nature of evaluation and assessment, is of supreme importance. Also necessary, concerning education systems worldwide, is a special inquiry into the actors lobbying for changes, the kind of changes being demanded, and what these changes are symptomatic of.

3.2.4. Digital Natives as Researchers

The popular imagination abounds with myths about Digital Natives – painting them as either the world’s techno-saviours or future demons. Serious scholarship must dispel these myths from popular and academic discourse. Young Digital Natives have already begun producing their own stories and narratives, often grappling with serious issues and concerns and also sometimes showing how they are better than digital migrants or settlers, at understanding the platforms and mechanics of their engagement with technologies. In almost all the literature reviewed, the Digital Native is almost always the subject of study rather than the voice that tells the story. Promoting research by younger scholars would not only provide an alternative and empowered narrative from the people being discussed; it would also involve the Digital Natives in reflecting on their actions and identities.

3.2.5. Digital Natives on the ‘Other’ Side

While much reflection on Digital Native identity imagines a progressive, secular, educated and informed identity, not all digitally native identities conform to this character. Fundamental religious groups, groups and communities of faith, and often regressive groups that endorse violence and terror also produce Digital Natives that need to be reckoned with. As we promote certain kinds of technologies and recognise their power and potential, we also need to investigate what happens when these technologies are ‘abused’. The power of social networking using digital platforms can also be harnessed by regressive groups that can influence younger users to commit undesirable actions. GPS technologies can also be the basis of mapping acts of terror. Blogs and other pseudonymous structures can become platforms of hate speech and violence. The potential for abuse of such powerful social technologies makes one realise that, as unsavoury as the thought might be, those who disrupt and violate the very fabric of human social life and behaviour are also Digital Native identities. Further research into creating safeguards (as opposed to merely suggesting the regulation of behaviour or social learning) that will deter such abuses of technology while still harnessing its positive power is much needed.

3.2.6. Revisiting the Socio-political Landscape

There is a tendency among many researchers to imagine the political landscape as static and Digital Natives as failing to subscribe to earlier notions of political change and social transformation. Digital Natives do not use new digital tools merely to continue existing political processes. They might often contribute to political legacies, but if they indeed constitute a significantly new population, their understanding, vocabulary, processes of engagement and tools of participation are going to be new and require investigation. The bulk of contemporary research focuses on case-studies where Digital Natives have augmented or supplemented pre-digital notions of what constitutes the political, but does not give us an idea of the changes they are inducing in the very conceptualisation of the political. Similarly, the lament across societies that the young are apolitical is a result of insufficient attention paid to those of their activities that do not conform to existing notions of political and civil society formation.

3.3 Policy Guidance

While the survey of literature and scholarship addresses most of the questions that were raised within the scope of the Scouting Mission, additional information, which must be included in this report, has been gleaned from practitioners in the field. In conversations, consultations and feedback, five constructive and urgent perspectives for future intervention have been devised. These perspectives are informed more by the experience of respondents in the field than by literary theories or scholarship.

3.3.1. Taking the ‘e’ out of Activism

The phrase ‘digital activism’ or ‘e-activism’ is a misnomer. It seems to indicate a certain kind of activism that remains confined to digital environments and networks. And, indeed, examples exist, such as the users on Facebook who mobilised against what they saw as an invasion of their privacy, or Avril Lavigne fans who created human bots to make her video the most watched on YouTube – but these are few and far between. When we talk about youth and activism, we need to keep in mind the interaction between online and offline engagement. The efforts need to be twofold: first, to create conditions that allow participating youths to exploit the potential of technologies they are familiar with and invest in; second, to create access and awareness among Digital Natives who are familiar with the technologies and digital environments but are not yet politically motivated or participating in social change. Many e-activism efforts presume that technology will be the solution that involves youths in politics, including projects initiated by UNESCO, or the US government where mere presence in the digital environment did not lead to an effective mobilisation.

Digital Natives are sensitive and thoughtful, and it is time to listen to them, their ideas, and their activities, and to focus on their development as responsible and active citizens, aware and engaged, rather than focusing on their digital exploits or technologised interests. The answer is not in the 'e' but in the 'activism', and in engaging with existing political movements and spaces rather than creating new ones.

3.3.2. Creating Sustainable Conditions of Change

One of the areas of most intense activity regarding Digital Natives, political participation, and livelihood is the development of new platforms, tools, and systems that can integrate the political and CSO imagination with the activities of the young. Such efforts, however, are misdirected. Repeatedly, projects have demonstrated that any successful mobilisation depends on using existing tools that are already popular with and known intimately by Digital Natives. The construction of tools or environments requires massive relearning and reorientation on the part of Digital Natives, and generally fails because it never garners sufficient human or other resources.

For many years now, Ethan Zuckerman, co-founder of Global Voices, has been talking about the Cute Cat Theory. This is a useful way to think about what technology to develop, support and deploy within various activist communities.

'The key to a study like this, I think, is to try to get a sense for what media youth in a country are gravitating towards, as a whole. One of the aspects of the Cute Cat theory I've been promoting is the idea that people are going to use whatever tools they're most comfortable with for activism, not just the ones that we'd like them to use. In Latin America, that might mean fotolog, while in the Middle East, it might mean Facebook. We need to view the field like anthropologists, not like software developers.'

Zuckerman's comment is echoed by many other grass roots organisations (included in the Knowledge Networks) that suggest efforts need to make conditions of change possible – so that tomorrow, if a Digital Native wants to use technologies he/she is familiar with, he/she should have the assurance, guidance and support of spaces that will allow him/her to begin their own political campaign. Youthcamps, barcamps, sourcecamps, exchange, digital broadcast and publishing platforms, organisations that help in understanding the legal implications of their actions, and a vast infrastructure that allows for the germination and growth of effective political ideas that also use online components – all must be promoted. Instead of focusing on providing mere access or technical infrastructure – which many governmental and corporate bodies are already doing – it is more fruitful to create conditions of change within which the young can work as agents of change. As Noel Selegzi very succinctly suggests:

'The reason that ICT will likely make today's youth better off is nothing inherent in the technology, I suspect, as much as it is inherent in youth. Studies show that youth tend to be more open, creative, tolerant and optimistic than older generations. Put new tools in the hands of young people, they'll put it to good use...the most technologically advanced project will necessarily be the most effective one in a less developed country where people's access to the most advanced technology is limited. The focus has to be on figuring out how technology can be used to create a multiplier effect.'

3.3.3. Engaging with the Physical-Virtual Dialectic

Much of the perception of Digital Natives carries the baggage of false dichotomies and binaries of discourse around technologically-mediated identities. Within cyberculture studies, as well as in earlier interdisciplinary work on digital Internets, there has been an explicit and now an implied division of the physical and the virtual. The virtual seems to be a world only loosely anchored in the material and physical reality, and almost seems to be at loggerheads with the real in producing its own hyper-visual reality. These distinctions, though not often invoked, are present in various perceptions of Digital Natives, and seem to reside in virtual worlds producing a 'disconnect' from everyday reality. The alternative public spheres of speech and expression created by the rise of the blogosphere and peer-to-peer networking sites seem to reside only within the digital domain. The frenzied cultural production and consumption on sites like YouTube and Second Life are contained within digital deliriums.

Similarly, when attention is paid to Digital Natives and their activities, it is confined to what they do, inhabit, consume and produce online, often neglecting their embodied presence circumscribed by different contexts. Such a perceived distinction is often dangerous and futile. It is necessary to overcome the physical-virtual dialectic when speaking of Digital Natives and to consider them as techno-social identities who straddle, like Donna Haraway's cyborgs, the realms of the physical and the virtual simultaneously.

Businesses have already begun to provide this multiverse experience that caters to Digital Natives. MIT Professor Jing Wang, author of the book *Brand New China* and Director of the NGO 2.0 Programme, suggests that web 2.0 advertising and business is less about creating social applications and sites than about transmitting the physical into the virtual and vice versa. Starbucks cafes provide free wifi access to all customers. Certain business complexes are setting up blanket wifi public gathering places. Malls and multiplex cinemas are offering blue-tooth zones for people to interact digitally with objects and people. These are all successful ways of providing anchors for the virtual activities that Digital Natives engage in.

Providing regional and local physical conditions which help the Digital Natives to become aware of the political edge of their choices and activities and further offer them free, guided and safe spaces to experiment with these new ideas – to form new networks and intellectual think tanks with help and infrastructure support from digital immigrants and settlers – would help shape individual efforts into larger and more effective movements.

3.3.4. Multilateral Networks

Around the world, the market and the state have entered into complex public-private partnerships that have created new publics and public spaces for the digital age. Digital Natives are a part of these spaces and their current activities need to be supported, fostered and understood to see that they are already active stakeholders in different kinds of change. Organisations, practices and policies that create conditions of awareness, education and mobilisation using these technologised spaces and protecting the rights of Digital Natives to engage in these activities need to be established. Funds to support the free voice publishing or reporting, an infrastructure of legal support to encourage the use of peer-to-peer networks, policies to protect the right of free speech and political mobilisation, and strategies to promote open systems of infrastructure and communication online are paramount to creating conditions of change and development.

Currently, much of the work in this area is being pioneered and initiated by CSOs, NGOs, universities and, to some extent, government bodies. Each of these players has its own individual networks, which often do not talk to each other. Moreover, the corporate world, which is also active in this field, conducting responsible research and development, is kept outside this fold. Creating multilateral networks that convene all the major players in the field of Digital Natives and engagement is a first step towards consolidating knowledge and experience.

3.3.5. The Politics of Funding

Involving Digital Natives in different activities and offering them support to develop and experiment with their ideas is definitely desirable. If Digital Native identity is to be conceptualised and understood, the input of the people being studied and their own sense of ownership of this identity are crucial. However, many Digital Natives who could be a part of this kind of research and activity are school and college students, young children and adults, who might have the skills to work on their ideas but not to write funding proposals and research statements.

Keeping this in mind, it is necessary to think of a funding model that offers incentives, financial assistance and support to ideas without the usual mechanics of funding and scholarship that might be beyond the ken of the intended audience. Simple procedures and models by which interesting ideas can be recognised and supported without the complexities and politics of funding need to be established before entering the field.

3.4 Next Steps

This scouting mission displays that digital natives have a potential impact as agents of change. Young people can be an entry point for bringing technology and engagement together. But the answer is not in the 'e' but in the 'activism'. Engagement with youth should focus on their development as responsible and active citizens rather than on their digital exploits or technologised interests. As a first step in working towards enabling digital natives for social transformation and

political engagement, a multistakeholder conference (researchers, practitioners, business, digital natives themselves) will be organized fall 2010.

Appendices

A. References

LITERATURE

- Anderson, Craig, Gentile, D. & Buckley, K.. 2007. *Violent Video Game Effects on Children and Adolescents: Theory, Research, and Public Policy*. New York: Oxford University Press.
- Banerjee, Indrajit (Ed.). 2007. *The Internet and Governance in Asia: A Critical Reader*. National University Singapore.
- Bauerlein, Mark. 2008. *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future, or Don't Trust Anyone Under 30*. New York: Tarcher/Penguin Books.
- Benkler, Yochai. 2007. *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. Yale University Press. Also available at http://www.benkler.org/Benkler_Wealth_Of_Networks.pdf.
- Bennet, Lance. 2008. 'The Generational Shift in Citizen Identity: Implications for Civic Learning Online'. Report by Centre for Communications Civil Engagement. Available at <http://www.engagedyouth.org/blog/wp-content/uploads/2008/05/civiclearning-the-generationalshift.pdf>. Retrieved March 2009.
- Bennett, Sue, Karl Maton and Lisa Kervin. 2008. 'The "Digital Natives" Report – A Critical Review of the Evidence', Melbourne. Available at <http://www.cheeps.com/karlmaton/pdf/bjet.pdf>.
- Berman, Ari. 2009. 'Iran's Twitter Revolution'. *The Nation*. Available at <http://www.thenation.com/blogs/notion/443634>.
- Boyd, Dannah and Ellison Nicole. 2007. 'Social Network Sites: Definition, History, and Scholarship'. *Journal of Computer-Mediated Communication*, 13(1), article 11, <http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html>.
- Carpentier, Megan. 2009. 'In Iran, "Pretty" is sometimes the Protest'. *Jeezbel*. Available at <http://jeezbel.com/5292899/in-iran-pretty-is-sometimes-the-protest>.
- Chen, Wenhong and Barry Wellman. 2004. *IT & Society*, 1(7) Spring/Summer, pp. 39-45.
- Clark, Andy. 2003. *Natural Born Cyborgs*. London: Oxford University Press.
- Coleman, Loren. 2007. *The Copycat Effect: How the Media and Popular Culture Trigger the Mayhem in Tomorrow's Headlines*. Simon & Schuster.
- Bell David, and Kennedy, Barbara (Eds). 2000 'Cyberculture.' *The Cybercultures Reader*. New York: Routledge.
- Doctrow, Cory. 2009. 'Cyberwar Guide to Iran Elections'. Available at <http://boingboing.net/2009/06/16/cyberwar-guide-for-i.html>.
- Escobar, Arturo. 1994. 'Welcome to Cyberia: Notes on the Anthropology of Cyberculture', *Current Anthropology*, 35 (3).
- Ethan Zuckerman (Berkman Center for Internet and Society), researcher, activist. On email with the authors. <http://ethanzuckerman.com/>
- Garfinkel, Simon. 2000. *Database Nation: The Death of Privacy in the 21st Century*. New York: O'Reilly Press.
- Haraway, Donna. 1995. Preface. *The Cyborg Handbook*. Grey, C. (Ed.). London: Routledge.
- Hallowell, Edward. Blog available at <http://www.drhallowellsblog.typepad.com/>.
- Howe, Jeff. 2009. *Crowdsourcing: How the Power of the Crowds is Driving the Future of Business*. Random House Books.
- Huat, Chua Beng. 2000. *Consuming Asians: Lifestyles and Identities*. London: Routledge.
- IBM strike in second life, http://www.theregister.co.uk/2007/08/24/ibm_italy_strike/
- Internet de-addiction centres in China. Article available at <http://news.bbc.co.uk/2/hi/asia-pacific/4327258.stm>.
- Jaagore India, <http://www.jaagore.com/main.php>.
- Jukes, Ian, Bruce MacDonald, and Anita Dosaj. 2007. *NetSavvy: Building Information Literacy in the Classroom*. Sage Publications.
- Laurel, Brenda and Fisher S. Scott (Eds.). 1990. *The art of human-computer interface design*. Cupertino, CA: Apple Computers.
- Livingstone, Sonia. 2008. *The International Handbook of Children, Media and Culture* (edited with Kirsten Drotner). London: Sage.

- Mizuko, Ito, Daisuke Okabe and Misa Mtsuda. 2006. *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*. Springer Books.
- Morozov, Evgeny. 2009. 'Foreign Policy: Brave New World of Slacktivism', available at <http://www.npr.org/templates/story/story.php?storyId=104302141>.
- Mothers Against Videogame Addiction and Violence, <http://www.mavav.org/>.
- Caroline, Nevejan. 2008. *The Design of Trust*. (Forthcoming.)
- Nisha, Susan (Delhi), writer and activist who started the Pink Chaddi campaign. More details available at <http://thepinkchaddicampaign.blogspot.com/>.
- Palfrey, John and Urs Gasser. 2008. *Born Digital*. New York: Basic Books.
- Prensky, Marc. 2001. 'Digital Natives, Digital Immigrants', available at <http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives.%20Digital%20Immigrants%20-%20Part1.pdf>. Retrieved January 2009.
- Prensky, Marc. 2004. 'Give Us 21st Century Tools'. Talk delivered at Department of Education's NCLB eLearning Summit.
- Rhoads, Christopher and Loretta Chao. 2009. 'Iran's Web Spying Aided by Western Technology'. *The Wall Street Journal*. Available at <http://online.wsj.com/article/SB124562668777335653.html>.
- Rheingold, Howard. 2001. *Smart Mobs: The Next Social Revolution*. New York: Perseus Publishing.
- Shah, Nishant. 2007. 'The Importance of Being Cautious', *The Hindu*. Available at <http://www.hindu.com/mag/2007/09/02/stories/2007090250010100.htm>.
- Shah, Nishant. 2007. 'Subject to Technology', *Inter Asia Cultural Studies Journal*. Available at <http://cis-india.org/publications/cis-publications/nishant-shahs-publications>.
- Shah, Nishant. 2007. *Sarai Reader: Turbulence*. Available at http://www.sarai.net/publications/readers/06-turbulence/04_nishant_shah.pdf.
- Shah, Nishant. 2009. 'Now Streaming at a screen near you: Contextualising Digital Cinema in Asia through Kuso'. *Journal of Chinese Cinema*.
- Schoenberger, Mayer. 2007. 'The Art of Forgetting in the Age of Ubiquitous Computing'. Working paper available at <http://ksgnotes1.harvard.edu/Research/wpaper.nsf/rwp/RWP07-022>.
- Stanat, Michael. 2005. *China's Generation Y. Understanding the Future Leaders of the World's Next Superpower*. Homa & Sekey Books.
- Stone, Sandy. 1991. *Cyberspace: First Steps*, ed. Michael Benedikt. Cambridge: MIT Press, 81-118.
- Strahilevitz, Lior. 2004. 'A Social Networks Theory of Privacy'. University of Chicago Law & Economics, Olin Working Paper No. 230; University of Chicago, Public Law Working Paper No. 79. Available at <http://ssrn.com/abstract=629283>.
- Suk Young Chwe, Michael. 2001. *Rational Ritual: Culture, Co-ordination and Common Knowledge*. Princeton, NJ: Princeton University Press.
- Sundaram, Ravi. 2004. 'Uncanny Networks: Pirate, Urban and New Globalization', *The Economic Political Weekly*. January, New Delhi.
- Tapscott, John. 2008. *Grown-Up Digital: How the Net Generation is Changing your World*. New York: Vintage Books.
- Tsunami bloggers, <http://tsunamihelp.blogspot.com/>.
- Turkle, Sherry. 1996. *Life on the screen: Identity in the age of the internet*. London: Weidenfeld and Nicolson.
- Turkle, Sherry. 1998. 'Cyborg babies and cy-dough-plasm'. *Cyborg Babies: From Techno-sex to Techno-Tots*. Eds. Robbie Davis-Floyd and Joseph Dumit. New York and London: Routledge
- Vaidhyanathan, Siva. 2008. Available at Chronicle of Higher Education, 19 September 2008. <http://chronicle.com/free/v55/i04/04b00701.htm>.
- Vietnam's brave bloggers. 2006. Available at <http://globalvoicesonline.org/2009/05/17/vietnam-bloggers-under-attack/>.
- Votereport India. <http://votereport.in/> in conversation with Gaurav Mishra.
- Wang, Jing. 2008. *Brand New China: Advertising, Media and Commercial Culture*. MIT Press.
- Warwick, Stephen. 2000. *I, Cyborg*. London: University of Reading Press.
- Weinberger, David. 2008. *Everything is Miscellaneous: The Power of the Digital Disorder*. New York: Times Books.
- Wolf, G. 'How the Internet invented Howard Dean'. Available at http://sodacity.net/system/files/Gary-Wolf_How-the-Internet-Invented-Howard-Dean.pdf. Retrieved March 2009.

World Information City (Bangalore). 2004. <http://world-information.org/wio/india>.

Yue, Audrey (Ed). 2006. *Mobile Cultures: New Media in Queer Asia*. London: Duke University Press.

PEOPLE

Bob Ostertag in 2008 conducted an experiment in plagiarism with his students, http://www.dateline.ucdavis.edu/dl_detail.lasso?id=9472.

Cathy Davidson. Researcher, educator. Email with authors. <http://www.hastac.org/blog/79>

Denise Tang (Taiwan), researcher, activist. In conversation with authors.

Dina Mehta (India), activist, writer. On her blog <http://dinamehta.com/>.

Emma Ota (Japan), artist, researcher, curator. Conversation with authors. <http://www.dis-locate.net/>

Hernan Bonomo, Programme Co-ordinator of the Youth Initiative Programme, Open Society Institute. Email with authors. <http://www.soros.org/initiatives/youth/about/bios/bonomo>.

Kariem Friedman, faculty member at DongHua University, Taiwan, and author of the blog *Savage Minds*. In conversation.

Lawrence Liang (Bangalore), legal theorist, activist. Conversation with authors. http://www.altlawforum.org/OUR_TEAM/profile

Matt Hanson artist, producer, writer. Conversation with authors. <http://matthanson.net/>.

Noel Selegzi, Director Open Society Institute, Open Debate Programme. Over email with authors. http://www.soros.org/initiatives/youth/about/bios/noel_selegzi

Peter Griffin (Mumbai), e-activist, writer. In conversation with authors.

Sebastian Lutgert (Berlin), artist, researcher, activist. Conversation with authors. <http://piratecinema.org/>.

Shaina Anand (Mumbai), artist, researcher, activist. Conversation with authors. <http://www.chitrakarkhana.net>.

Shivam Vij, journalist, researcher. In conversation with authors. His blog is available at <http://www.shivamvij.com/>.

Sunil, Abraham (Bangalore), social entrepreneur, activist, researcher.

Zuckerman, Ethan (Berkman Center for Internet and Society), researcher, activist. Email with authors. <http://ethanzuckerman.com/>.

B. Bibliography

A total of 102 different sources, including books, journal articles, reports, and other popular/influential Internet resources were surveyed for this literature review. Apart from these, a few other theoretical texts, which have been mentioned in the detailed survey but are not necessarily part of the Digital Native paradigm, have also been perused. To enhance the knowledge framework, sources were classified across four different medians and a classification schema was developed. The medians and the classification system are explained in detail below.

Classification Categories:

Region of Origin/Focus

Most of the literature included in this bibliography is in English and hence often published by publishing houses and presses in the West. However, the region of publication does not always correspond to the region of focus for the particular text. Hence, instead of focusing on the place of publication, the literature has been tagged according to the particular regions explored. Five large divisions were made and codes assigned depending on the region.

- a. **Global:** Literature that did not have a regional focus but was more concentrated on pan-global, multinational sources and ideas.
- b. **Developed Information Societies:** Literature that specifically concentrated on case studies, examples or resources from North America, North and Western Europe and developed information societies in Asia like Singapore and Japan.
- c. **Emerging Information Societies:** Literature that concentrated on resources and ideas from emerging information societies in Latin America, sub-Saharan Africa, and South and East Asia; limited largely to questions of the urban.
- d. **Under-developed Information Societies:** Literature that focused on poorly developed information societies, rural areas without connectivity or access.

Type of Literature

Survey literature is drawn from various sources classified under five categories.

- a. **Books:** Academic publications that are influential in defining the key concepts of this report.
- b. **Journal Articles:** Essays published in academic, peer-reviewed journals and publications.
- c. **Internet Resources:** Articles, opinions and blogs published on various self-authoring and publishing sites on the Internet, which have been crucial in documenting various phenomena.
- d. **Reports:** Reports produced by corporate, government and non-governmental bodies about studies done in the field.
- e. **Miscellaneous:** Conference papers, presentations, unpublished information, stories, information that might not have a verifiable source but has been collected from emails, conversations and discussions with scholars and practitioners in the field.

Field under Focus

Survey literature draws from various disciplines and area studies sorted into four categories based on the disciplinary perspective of the authors or the particular area of focus.

- a. **Social Sciences and Humanities:** Includes the disciplines of Sociology, Anthropology, Language and Literature Studies, Applied Psychology, Liberal Arts and Economics.

- b. **Media and Communication Studies:** Includes the areas of user behaviour, user reception, impact measurement studies, computer-human interaction, and social studies of technology development and sustenance.
- c. **Identity Studies:** Includes literature that uses the different identity politics perspectives from Feminism, Social Movements, Gender and Sexuality and Digital Natives studies as an entry point to the debate.
- d. **Policy and Legal Research:** Includes literature that analyses or makes policy changes and recommendations and the implications of legal theory, practice and legislation.
- e. **Cultural Studies:** Includes multidisciplinary and interdisciplinary work and frameworks, cinema and technology studies, legal theory, philosophy of sciences and cybercultures.

Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Anderson, Craig, Gentile, D. and Buckley, K.	2007	<i>Violent video game effects on children and adolescents: Theory, research, and public policy</i>	Oxford University Press			Global	Book	Policy and Legal Research
Asthana, Sanjay	2006	<i>Innovative Practices of Youth Participation in Media: A research study on twelve initiatives from around the developing and underdeveloped regions of the world</i>	UNESCO			Emerging Information Societies/Under-developed Information Societies	Report	Policy and Legal Research
Banerjee, Indrajit (Ed.)	2007	<i>The Internet and Governance in Asia: A critical reader</i>	National University, Singapore			Emerging Information Societies	Book	Social Sciences and Humanities
Banks, Martin	2007	'IBM strike in second life'			http://www.theregister.co.uk/2007/08/24/ibm_italy_strike/	Developed Information Societies	Internet Resource	Policy and Legal Research
Bauchspies, Wenda, Croissant, Jennifer and Restivo, Sal	2006	<i>Science, Technology, and Society: A sociological approach</i>	Wiley-Blackwell			Global	Book	Cultural Studies
Bauerlein, Mark	2008	<i>The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future, or Don't Trust Anyone Under 30</i>	Tarcher/Penguin Books			Developed Information Societies	Book	Media and Communication Studies
Bennet, Lance	2008	'The Generational Shift in Citizen Identity: Implications for Civic Learning Online'	Centre for Communications Civil Engagement		http://www.engagedyouth.org/blog/wp-content/uploads/2008/05/civiclearning-the-generationalshift.pdf Retrieved March 2009	Global	Report	Policy and Legal Research
Bennett, Sue, Maton, Karl and Kervin, Lisa	2008	'The "Digital Natives" Report – a critical review of the evidence'			http://www.cheeps.com/karlmaton/pdf/bjiet.pdf	Developed Information Societies	Report	Policy and Legal Research

Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Bonilla, Marcelo and Cliché, Giles	2004	<i>Internet and Society in Latin America and the Caribbean</i>	IDRC			Emerging Information Societies/Under-developed Information Societies	Report	Social Sciences and Humanities
Boyle, Liam and Stanford, Jodi (Eds.)	2007	<i>Digital Native</i>	Morlacchi Editore			Developed Information Societies/Emerging Information Societies/Under-developed Information Societies	Book	Social Sciences and Humanities
Brown, Nik and Webster, Andrew	2004	<i>New Medical Technologies and Society: Reordering Life</i>	Wiley-Blackwell			Global	Book	Cultural Studies
Buckingham, David (Ed.)	2007	<i>Youth, Identity and Digital Media</i>	MIT Press			Developed Information Societies/Global	Book	Identity Studies
Buote, V. M., Pancer, S. M., Pratt, M. W., Adams, G., Birnie-Lefcovitch, S., Polivy, J., and Wintre, M.G.	2007	'The Importance of Friends: Friendship and Adjustment Among 1st-Year University Students'	<i>Journal of Adolescent Research</i>	22 (6)	665-689	Developed Information Societies	Journal Article	Social Sciences and Humanities
Choi, Jaz Hee-jeong	2007	'Approaching the Mobile Culture of East Asia'	<i>M/C: A Journal of Media and Culture</i>	10 (1)		Emerging Information Societies/Under-developed Information Societies	Journal Article	Media and Communication Studies
Chun, Hui Hyong and Keenan, Thomas	2006	<i>New Media, Old Media</i>	Routledge			Emerging Information Societies/Under-developed Information Societies	Book	Media and Communication Studies
Clark, Andy	2003	<i>Natural Born Cyborgs</i>	Oxford University Press			Global	Book	Identity Studies
Clifford, Pat	2005	'Cyberkids'			http://www.ceaace.ca/media/CLIFFORD_spring05.pdf	Global	Internet Resource	Media and Communication Studies
Coleman, Loren	2007	<i>The Copycat Effect: How the Media and Popular Culture Trigger the Mayhem in Tomorrow's Headlines</i>	Simon and Schuster			Developed Information Societies	Book	Media and Communication Studies
Davie, Ronald et al.	2004	'Mobile phone ownership and usage among pre-adolescents'	<i>Telematics and Informatics</i>	21	359-373	Developed Information Societies	Journal Article	Social Sciences and Humanities

Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Delwiche, Aaron	2008	'It's a Kid's World'			http://flowtv.org/?p=1268	Global	Internet Resource	Media and Communication Studies
Dresang, Edward	1999	'Radical change: Books for youth in a Digital Age'	<i>Contemporary Issues in Technology and Teacher Education</i>	8 (3)	277-293	Developed Information Societies	Journal Article	Policy and Legal Research
Drotner, Kirsten and Livingstone, Sonia (Eds.)	2008	<i>The International Handbook of Children, Media and Culture</i>	Sage Publications			Emerging Information Societies/Developed Information Societies	Book	Cultural Studies
Eck, Richard V	2006	'Digital Game-Based Learning: It's not just the Digital Natives who are restless...'	<i>EDUCAUSE Review</i>	41 (2)		Global	Journal Article	Social Sciences and Humanities
Escobar, Arturo (Bell, David and Kennedy, Barbara, Eds.)	1994	'Welcome to Cyberia: Notes on the Anthropology of Cyberculture' (in <i>The Cybercultures Reader</i>)	Routledge			Global	Book	Cultural Studies
Fischer, Herve and Mullins, Rhonda	2006	<i>Digital Shock: Confronting the New Reality</i>	McGill-Queen's Press			Global	Book	Cultural Studies
Fornas, Johan, Klein, Kasja et al.	2002	<i>Digital Borderlands: Cultural Studies of Identity and Interactivity on the Internet</i>	Peter Lang Publishers			Emerging Information Societies	Book	Identity Studies/Cultural Studies
Gajjala, Radhika	2004	<i>Cyber Selves: Feminist ethnographies of south Asian women</i>	Rowmna Altamira			Emerging Information Societies/Under-developed Information Societies	Book	Social Sciences and Humanities/Identity Studies
Garfinkel, Simon	2000	<i>Database Nation: The Death of Privacy in the 21st Century</i>	O'Reilly Press			Developed Information Societies	Book	Social Sciences and Humanities
Gennaro, C. and Dutton, H	2007	'Reconfiguring Friendships: Social Relationships and the Internet'	<i>Information, Communication & Society</i>	10 (5)	591-618	Developed Information Societies	Journal Article	Media and Communication Studies
Gray, Chris	2001	<i>Cyborg Citizens: Politics in the posthuman age</i>	Routledge			Developed Information Societies	Book	Identity Studies
Green, Eileen and Adam, Alison	2001	<i>Virtual Gender: Technology, consumption, and</i>	Routledge			Global	Book	Identity Studies

Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
		<i>identity</i>						
Griffiths, Michael, Davies, Mark and Chappell, Darren	2004	'Online Computer Gaming: A comparison of adolescent and adult gamers'	<i>Journal of Adolescence</i>	27	87-96	Developed Information Societies	Journal Article	Social Sciences and Humanities
Grinter, Rebecca and Palen, Leysia	2002	'Instant Messaging in Teen Life'	CSCW Conference Paper			Developed Information Societies	Miscellaneous	Social Sciences and Humanities
Haraway, Donna (Grey, C, Ed.)	1995	'Preface' (<i>The Cyborg Handbook</i>)	Routledge			Global	Book	Cultural Studies
Hargittai, E	2007	'Whose Space? Differences Among Users and Non-Users of Social Network Sites'	<i>Journal of Computer-Mediated Communication</i>	13 (1)	At http://jcmc.indiana.edu/vol13/issue1/hargittai.html	Global	Journal Article	Social Sciences and Humanities
Hatzipanagos, Stylianos and Warburton, Steven (Eds.)	2009	<i>Handbook of Research on Social Software and Developing Community Ontologies</i>	Idea Group			Global	Book	
Hinduja, Sameer and Patchin, Justin	2008	<i>Bullying Beyond the Schoolyard</i>	Corwin Press			Developed Information Societies	Book	Social Sciences and Humanities
Hjorth, Larissa	2008	<i>Mobile Phone Culture in the Asia Pacific</i>	Taylor and Francis			Emerging Information Societies/Under-developed Information Societies	Book	Social Sciences and Humanities
Hoang, Duy, Nguyen, Cuong and Hyunh, Angelina Hyunh	2009	<i>Vietnam's Blogger Movement: A virtual civil society in the midst of government repression</i>			http://www.digiactive.org/wp-content/uploads/vietnams-blogger-movement.pdf	Emerging Information Societies	Internet Resource	Policy and Legal Research
Hojsgaard, Morten and Warburg, Margit (Eds.)	2005	<i>Religion and Cyberspace</i>	Routledge			Emerging Information Societies	Book	Social Sciences and Humanities
Holloway, Sarah and Valentine, G	2002	'Cyberkids? Exploring children's identities and social networks in on-line and off-line worlds'	<i>Annals, Association of American Geographers</i>	92	302-319	Developed Information Societies	Journal Article	Social Sciences and Humanities
Holloway, Sarah and Valentine, Gill	2003	<i>Cyberkids: Children in the information age</i>	Routledge Falmer			Developed Information Societies	Book	Identity Studies
Howe, Jeff	2009	<i>Crowdsourcing: How the Power of the Crowds is Driving the Future of Business</i>	Random House Books			Global	Book	Media and Communication Studies

Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Huat, Chua Beng	2000	<i>Consuming Asians: Lifestyles and Identities</i>	Routledge			Emerging Information Societies	Book	Cultural Studies/Identity Studies
Huffaker, David	2004	'Spinning Yarns around the Digital Fire: Storytelling and Dialogue among Youth on the Internet'	<i>Information Technology in Childhood Education Annual</i>		63-75	Developed Information Societies	Journal Article	Social Sciences and Humanities
Huffaker, David and Calvert, Sandra L.	2005	'Gender, Identity, and Language Use in Teenage Blogs'	<i>Journal of Computer-Mediated Communication</i>	10 (2)	http://jcmc.indiana.edu/vol10/issue2/huffaker.html	Developed Information Societies	Journal Article	Media and Communication Studies
Ishida, Toru and Isbister, Katherine (Eds.)	2000	<i>Digital Cities</i>	Springer			Emerging Information Societies	Book	Social Sciences and Humanities
Ito, Mizuko, Okabe, Daisuke and Matsuda, Misa	2005	<i>Personal, Portable, Pedestrian: Mobile phones in Japanese life</i>	MIT Press			Emerging Information Societies	Book	Social Sciences and Humanities
Joyce, Mary and Patel, Ricken	2007	<i>Prospects for e-Advocacy in the Global South</i>	Res-publica report for the Gates Foundation			Emerging Information Societies	Report	Policy and Legal Research
Jukes, Ian, MacDonald, Bruce and Dosaj, Anita	2007	<i>NetSavvy: Building Information Literacy in the Classroom</i>	Sage Publications			Emerging Information Societies/Under-developed Information Societies	Book	Social Sciences and Humanities
Krause, Kerri-Lee et al.	2006	'Questioning the Net Generation: A collaborative project in Australian Higher Education'	Proceedings of the 23rd annual ascilite conference: Who's learning? Whose technology? University of Sydney			Global	Miscellaneous	Social Sciences and Humanities
Laurel, Brenda and Scott, Fisher S. (Eds.)	1990	<i>The Art of Human-Computer Interface Design</i>	Apple Computers			Global	Book	Cultural Studies
Leurs, Koen	Work in Progress	'Be(com)ing cyber Moco's : Digital Media, Migration and Glocalised Youth Cultures'	Utrecht University			Developed Information Societies	Miscellaneous	Cultural Studies
Loader, Brian	2007	<i>Young Citizens in the Digital Age</i>	Routledge			Emerging Information Societies/Developed Information Societies	Book	Policy and Legal Research

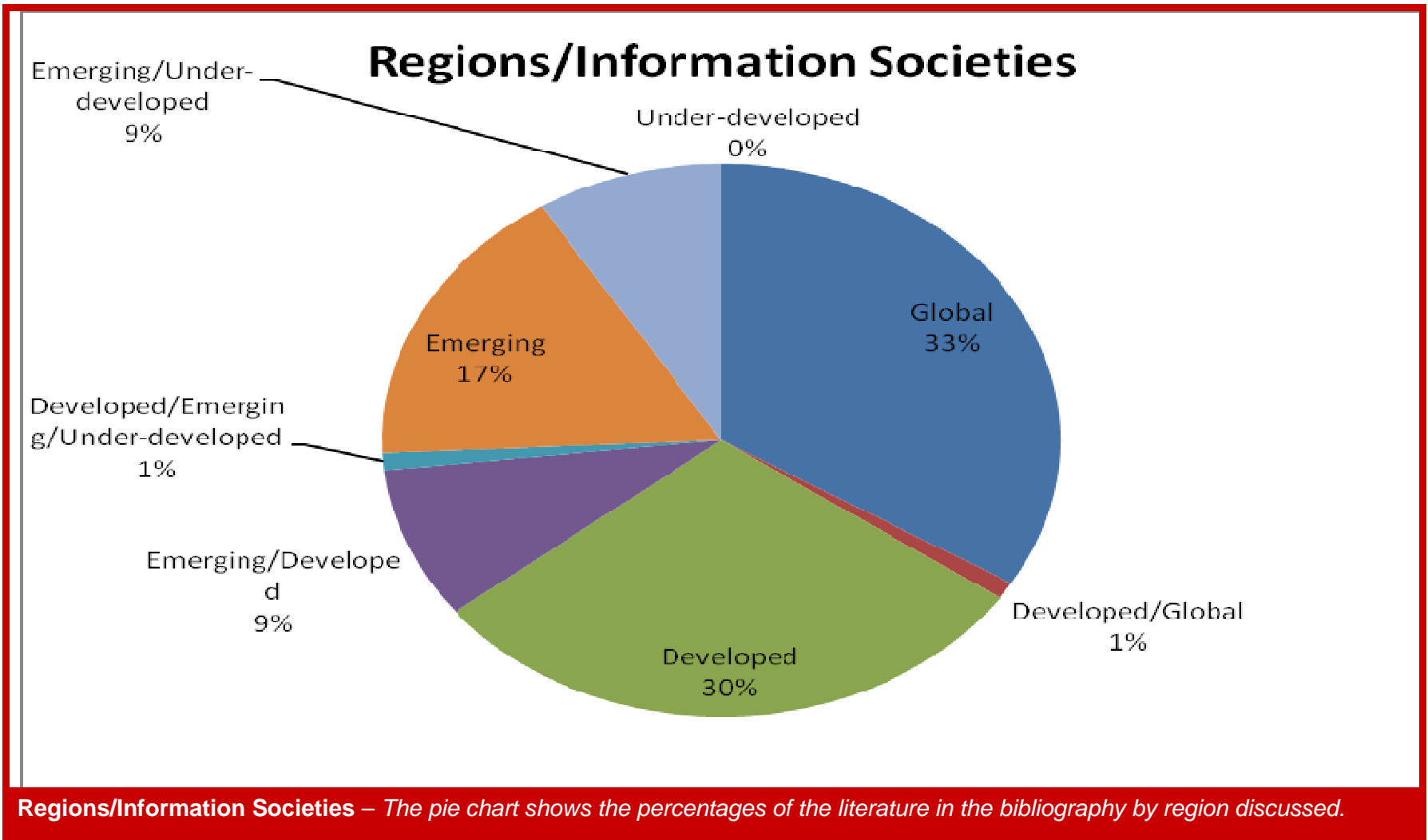
Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Luppicini, Rocci	2007	<i>Online Learning Communities</i>	IAP			Emerging Information Societies/Developed Information Societies	Book	Social Sciences and Humanities
Lusoli, Wainer and Miltgen, Caroline	2009	<i>Young People and Emerging Digital Services: An exploratory survey on motivations, perception and acceptance of risks</i>	EU Institute for Prospective Technological Studies			Developed Information Societies	Report	Policy and Legal Research
Lyon, David	2003	<i>Surveillance as Social Sorting</i>	Routledge			Global	Book	Social Sciences and Humanities
Marsh, Jackie		Digital Beginnings			http://digitalbeginnings.blogspot.com/	Developed Information Societies	Internet Resource	Social Sciences and Humanities
Matrix, Sidney	2006	<i>Cyberpop: Digital lifestyles and commodity culture</i>	CRC Press			Developed Information Societies	Book	Cultural Studies
Mazzarella, Sharon (Ed.)	2005	<i>Wide Web: Girls, the Internet, and the Negotiation of Identity</i>	Peter Lang Publishers			Developed Information Societies	Book	Identity Studies
McPherson, Tara (Ed.)	2007	<i>Digital Youth, Innovation, and the Unexpected</i>	MIT Press			Developed Information Societies	Book	Social Sciences and Humanities
Merchant, Guy	2001	'Teenagers in Cyberspace: An investigation of language use and language change in internet chatrooms'	<i>Journal of Research in Reading</i>	24 (3)	293-306	Developed Information Societies	Journal Article	Social Sciences and Humanities
Metzger, Miriam J. and Flanagan, Andrew J.	2007	<i>Digital Media, Youth, and Credibility</i>	MIT Press			Global	Book	Cultural Studies
Mitchell, Kimberley, Finkelhor, David and Wolak, Janis	2003	'The Exposure of Youth to Unwanted Sexual Material on the Internet: A National Survey Of Risk, Impact, and Prevention'	<i>Youth & Society</i>	34 (3)	330-358	Emerging Information Societies/Developed Information Societies	Journal Article	Social Sciences and Humanities
Moinian, Farzaneh	2006	'The Construction of Identity on the Internet: Oops! I've left my diary open to the whole world!'	<i>Childhood</i>	13 (1)	49-68	Emerging Information Societies/Developed Information Societies	Journal Article	Social Sciences and Humanities

Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Montgomery, Kathryn	2000	'Youth and Digital Media: A Policy Research Agenda'	<i>Journal of Adolescent Health</i>	27	61-68	Developed Information Societies	Journal Article	Policy and Legal Research
Montgomery, Kathryn, Gottlieb-Robles, Barbara and Larson, Gary O.	2004	<i>Youth as e-Citizens: Engaging the Digital Generations</i>	Centre for Social Media		http://hdl.handle.net/1961/4649	Emerging Information Societies/Under-developed Information Societies	Report	Policy and Legal Research
Nair, Rukmini Bhaya	1997	<i>Technobrat</i>	Harper Collins			Emerging Information Societies	Book	Social Sciences and Humanities
Nakamura, Lisa	2007	<i>Digitizing Race: Visual Cultures of the Internet</i>	University of Minnesota Press			Emerging Information Societies/Under-developed Information Societies	Book	Social Sciences and Humanities/Identity Studies
Palfrey, John and Gasser, Urs	2008	<i>Born Digital</i>	Basic Books			Global	Book	Policy and Legal Research
Prensky, Marc	2001	<i>Digital Natives, Digital Immigrants</i>			http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Native%20Digital%20Immigrants%20-%20Part1.pdf	Global	Internet Resource	Social Sciences and Humanities
Prensky, Marc	2004	'Give Us 21st Century Tools'	Talk delivered at Department of Education's NCLB eLearning Summit			Global	Miscellaneous	Social Sciences and Humanities
Quan-Haase, A.	2007	'University Students' Local And Distant Social Ties: Using and integrating modes of communication on campus'	<i>Information, Communication & Society</i>	10 (5)	671 - 693	Developed Information Societies	Journal Article	Media and Communication Studies
Rheingold, Howard	2001	<i>Smart Mobs: The next social revolution</i>	Perseus Publishing			Global	Book	Cultural Studies
Richardson, Joanne (Ed.)	2005	<i>Anarchitexts</i>	Autonomedia			Global	Book	Social Sciences and Humanities
Rivotella, Pier Cesare	2008	<i>Digital Literacy</i>	Idea Group			Global	Book	Social Sciences and Humanities

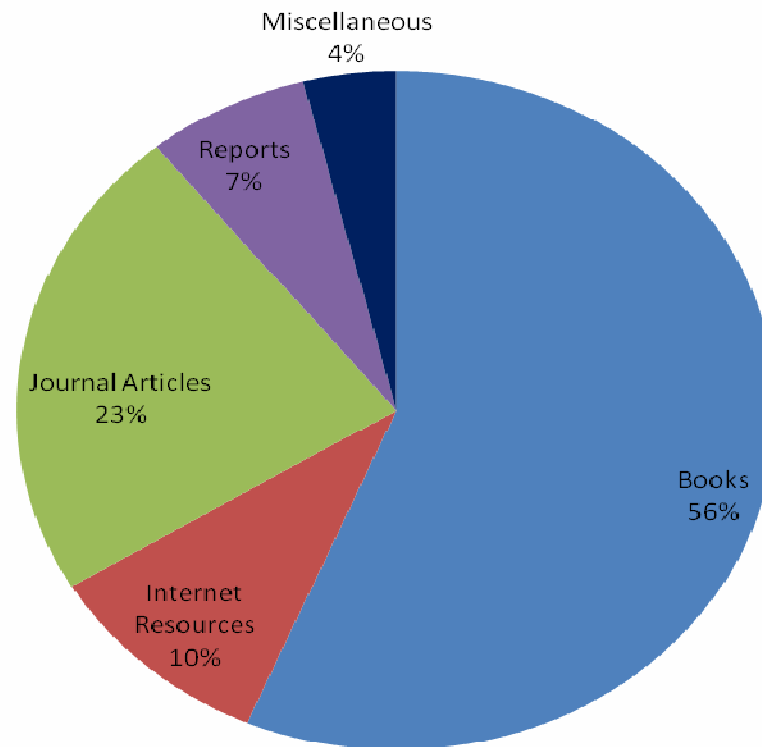
Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Russo, Angelina and Watkins, Jerry	2005	'Digital Cultural Communication: Enabling new media and cocreation in South East Asia'	<i>International Journal of Education and Development using Information and Communication Technology (IJEDICT)</i>	1 (4)	417	Emerging Information Societies	Journal Article	Media and Communication Studies
Shah, Nishant	2007	'Subject to Technology'	<i>Inter Asia Cultural Studies Journal</i>		http://cis-india.org/publications/cis-publications/nishant-shahs-publications	Emerging Information Societies	Journal Article	Cultural Studies
Shah, Nishant	2007	Sarai Reader: Turbulence			http://www.sarai.net/publications/readers/06-turbulence/04_nishant_shah.pdf	Emerging Information Societies	Internet Resource	Cultural Studies
Shah, Nishant	2009	'Now Streaming at a Screen Near You: Contextualising Digital Cinema in Asia through Kuso'	<i>Journal of Chinese Cinema</i>			Emerging Information Societies	Journal Article	Cultural Studies
Stanat, Michael	2005	<i>China's Generation Y: Understanding the Future Leaders of the World's Next Superpower</i>	Homa & Sekey Books			Emerging Information Societies	Book	Social Sciences and Humanities
Stone, Sandy (Benedikt, Michael, Ed.)	1991	'Will The Real Body Please Stand Up?: Boundary Stories About Virtual Cultures' (in <i>Cyberspace: First Steps</i>)	MIT Press		81-118	Global	Book	Cultural Studies
Subrahmanyam, Kaveri, Greenfield, Patricia and Tynes, Brendesha	2004	'Constructing sexuality and identity in an online teen chat room'	<i>Applied Developmental Psychology</i>	25	651-666	Emerging Information Societies/Developed Information Societies	Journal Article	Media and Communication Studies/Identity Studies
Sundaram, Ravi	2004	'Uncanny Networks: Pirate, Urban and New Globalization'	<i>The Economic and Political Weekly</i>	January		Emerging Information Societies	Book	Social Sciences and Humanities

Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Suzuki, Lalita and Calzob, Jerel	2004	'The Search for Peer Advice in Cyberspace: An examination of online teen bulletin boards about health and sexuality'	<i>Applied Developmental Psychology</i>	25	685-698	Developed Information Societies	Journal Article	Social Sciences and Humanities
Tapscott, John	2008	<i>Grown-Up Digital: How the Net Generation is Changing Your World</i>	Vintage Books			Global	Book	Social Sciences and Humanities
Thurlow, Crispin	2003	'Generation Txt?: The sociolinguistics of young people's text-messaging'	<i>Discourse Analysis Online</i>		http://www.shu.ac.uk/daol/articles/v1/n1/a3/thurlow2002003-paper.html	Global	Internet Resource	Media and Communication Studies
Toffoletti, Kim	2007	<i>Cyborgs and Barbie Dolls</i>	I.B. Tauris			Global	Book	Identity Studies
Turkle, Sherry	1996	<i>Life on the Screen: Identity in the age of the internet</i>	Weidenfeld and Nicolson			Global	Book	Identity Studies
Turkle, Sherry	2005	<i>The Second Self: Computers and the Human Spirit</i>	MIT Press			Global	Book	Identity Studies
Turkle, Sherry (Davis-Floyd, Robbie and Dumit, Joseph, Eds.)	1998	'Cyborg babies and cy-dough-plasm' (in <i>Cyborg Babies: From Techno-sex to Techno-Tots</i>)	Routledge			Global	Book	Identity Studies
Vaidhyanathan, Siva	2008	'Generational Myth: Not all young people are tech savvy'	Chronicle of Higher Education		http://chronicle.com/free/v55/i04/04b00701.htm	Emerging Information Societies/Developed Information Societies	Internet Resource	Social Sciences and Humanities
Van de Donk, Wim and Loader, Brian	2004	<i>Cyberprotest: New media, citizens, and social movements</i>	Routledge			Emerging Information Societies/Developed Information Societies	Book	Policy and Legal Research
Verton, Dan	2002	<i>The Hacker Diaries: Confessions of Teenage Hackers</i>	McGraw-Hill			Developed Information Societies	Book	Social Sciences and Humanities
Wang, Jing	2008	<i>Brand New China: Advertising, Media and Commercial Culture</i>	MIT Press			Emerging Information Societies	Book	Social Sciences and Humanities
Warwick, Stephen	2000	<i>I, Cyborg</i>	University of Reading Press			Global	Book	Identity Studies

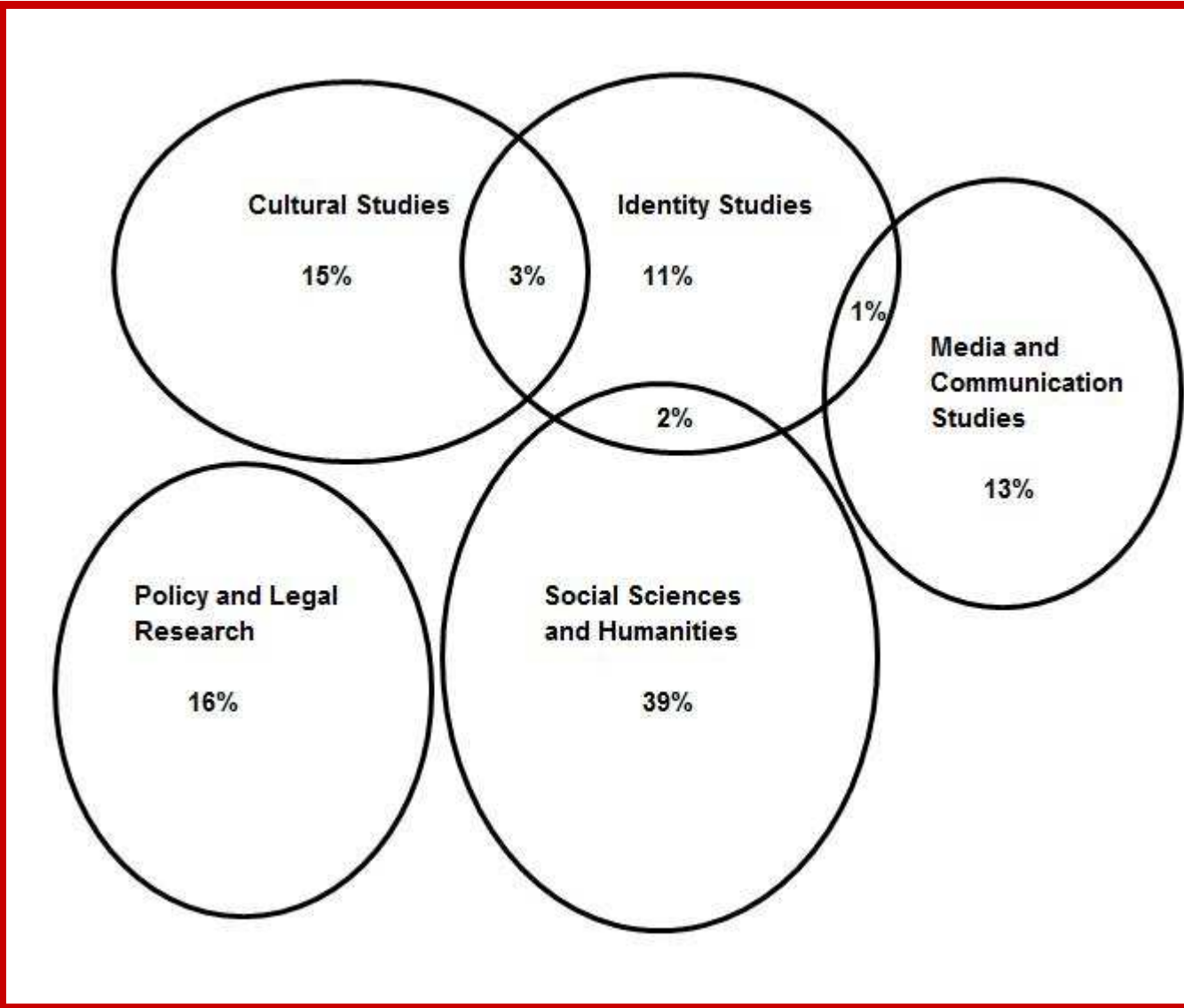
Author/Editor	Year	Title	Journal Title/Publisher	Volume /Issue	pp./Link	Region	Type	Area
Wilhelm, Anthony	2003	'Wireless Youth: Rejuvenating the Net'			http://www.dis.dk/Academic/Courses2/syllabi/virtualworlds.pdf	Emerging Information Societies/Developed Information Societies	Internet Resource	Policy and Legal Research
Willard, Nancy	2007	<i>Cyber-safe Kids, Cyber-savvy Teens</i>	Jossey-Bass Publishers			Global	Book	Social Sciences and Humanities
Wilson, Brian and Atkinson, Michael	2005	'Rave and Straightedge, the Virtual and the Real: Exploring Online and Offline Experiences'	<i>Canadian Youth Subcultures Youth & Society</i>	36 (3)	276-311	Developed Information Societies	Journal Article	Media and Communication Studies
Yue, Audrey (Ed.)	2006	<i>Mobile Cultures: New Media in Queer Asia</i>	Duke University Press			Emerging Information Societies	Book	Cultural Studies/Identity Studies
Zielinski, Chris, Zielinski, Krzystof, Duquenoy, Penny and Kimppa, Kai	2006	<i>The Information Society: Emerging Landscapes</i>	Birkhauser			Developed Information Societies	Book	Policy and Legal Research



Literature Types



Literature Types – The pie chart shows the percentage distribution of literature, by type.



Subject Area –
This venn diagram shows the distribution of literature across subject areas.

C. Knowledge Networks

Name of Project:	Address:	Web:	Summary:
Asia Pacific Networking Group	APNG Secretariat, intERLab, c/o Asian Institute of Technology (AIT), P.O. Box 4, Klong Luang, Pathumthani 12120, Thailand	http://www.apng.org/	Asia Pacific Networking Group (APNG) is an Internet organisation dedicated to the advancement of networking infrastructure in this region and to the research and development of all associated enabling technologies. Its mission is to promote the Internet and the coordination of network interconnectivity in the Asia Pacific Region. It also represents the 'Asia Pacific Next Generation', raising the voice of the Next Generation of the region. http://www.apng.org/organization.htm
CLCWA-Liaisons Locales Afrique de l'Ouest	N/A	http://projects.tigweb.org/clcwa/	Francois Laureys, IICD, did an evaluation of this project for TIG and suggests we ask Jennifer Corriero (jenergy@takingitglobal.org) for a copy of the report. Creating Local Connections West Africa (CLC WA) aims to realise the potential of youth and engage them as development actors in the improvement of their communities, countries and region. CLC WA will achieve this through peer-led trainings, networking, national youth meetings, media creation, award processes, research and development of strategic use of information and communications technologies (ICTs) during its implementation in: Sierra Leone, Nigeria, Guinea, Cote d'Ivoire and Liberia. The project's activities will run over a 12-month period (March 2007 – March 2008).
One Village Foundation	oneVillage Foundation, Ghana, Kafui A. Prebbie, Country Director, OVF Ghana, P. O. Box CO 1007, Tema, Ghana - West Africa	http://onevillagefoundation.org/ovf/	oneVillage Foundation, Ghana's yearly ICT ecotour programme started in 2008, will be of interest because it is purely youth-led, bringing students from Taiwan, USA and elsewhere to Africa to help train students in media skills while looking at ICTs and their impacts on the environments of emerging African markets.

Name of Project:	Address:	Web:	Summary:
Digital World Forum on Accessible and Inclusive ICTs	N/A	http://www.digitalworldforum.eu/	The Digital World Forum on Accessible and Inclusive ICTs is also a EU FP7 project that is being implemented in joint collaborations between European organisations and organisations from developing countries; oneVillage Foundation is a partner and a member of the project consortium.
Plan de Alfabetización Tecnológica de Extremadura	Asociación de Universidades Populares de Extremadura (AUPEX), Área de Comunicación y Tecnología, C/ Vasco Núñez, 31, bajo 06001, Badajoz, Spain	http://www.nccextremadura.org/recursos/manual_english.pdf	N/A
Heads Up	Hansard Society, 40-43 Chancery Lane, London, WC2A 1JA	http://headsup.org.uk/content/	The UK projects that we run at the Hansard Society (www.hansardsociety.org.uk) on political participation include HeadsUp, which hosts an online debating space for under-18s to share their views on political issues and events. Through the forums, HeadsUp aims to build young people's levels of political awareness and participation so that they can play an effective role in the democratic processes affecting their lives. HeadsUp is also a space politicians can use to consult with young people and learn about their ideas, experiences and opinions.
Y Vote Mock Elections	Hansard Society, 40-43 Chancery Lane, London, WC2A 1JA	http://www.mockelections.co.uk/	Y Vote Mock Elections aims to actively engage students with the political, social and moral issues of the world around them by giving them the opportunity to stand as party candidates, speech writers and canvassers in a mock election. Y Vote Mock Elections gives students the opportunity to engage in a fun active citizenship exercise and provides an excellent introduction to the mechanics and issues involved in an election.

Name of Project:	Address:	Web:	Summary:
School of Future Laboratory Research, Accessa Escola 2009	Sao Paolo, Brazil	http://acessaescola.fde.sp.gov.br/publico/index.aspx	The School of Future Laboratory Research (http://www.futuro.usp.br/), in Brazil, is an interdisciplinary laboratory investigating the impact of new communications technologies on learning at all educational levels and a centre of research within the University of Sao Paulo. It is developing two research areas based on a digital divide and digital inclusion programme called Accessa Escola in 2009. This programme was born in 2009 as a digital divide public politic. Our population focus in this reseach is youths under 17 years old living in the state of Sao Paulo, Brazil. We have begun to understand learning through conversation and youths' public participation in social networks.
Netfluence.org	N/A	http://netfluence.org/	Netfluence.org is an investigation into whether and how networked technologies influence political power structures. Netfluence.org is co-authored by Gaurav Mishra and Mary Joyce.
DigiActive	N/A	http://www.digiactive.org/	DigiActive is an all-volunteer organisation dedicated to helping grassroots activists around the world use the Internet and mobile phones to increase their impact. Our goal is a world of activists made more powerful and effective through the use of digital technology.
Jaagore	Janaagraha Centre for Citizenship & Democracy, 4th Floor, UNI Building, Thimmaiah Road, Vasanthnagar, Bangalore - 560052	http://www.jaagore.com	Jaago Re! One Billion Votes is a non-partisan national campaign launched by Janaagraha Centre for Citizenship and Democracy (a non-profit organisation) and Tata Tea, to awaken and enable the citizens of India, especially youths, to register to vote. Its mission is to register everyone in India to vote within the next five years, to achieve better governance. In the launch year (2008-09), the campaign targets India's 35 largest cities and aims to register millions of youths before the 2009 general elections.

Name of Project:	Address:	Web:	Summary:
Apathy is Boring	Apathy is Boring / L'Apathie C'est Plate, 3831 St. Denis, Montreal, Quebec, H2W 2M4, Canada	http://www.apathyisboring.com/	Apathy is Boring is a national non-partisan project that uses art, media and technology to encourage active citizenry, reaching out to a broad youth demographic about how to be more involved in their communities and the democratic process.
Smart Vote	N/A	http://www.smartvote.in/	Smartvote is a campaign supported by different voluntary organisations and citizens but without any political affiliation, created to provide information regarding candidates standing for election at various levels, enabling the public to make an informed choice.
Focus Initiative	N/A	http://www.e-verano.org/edicion/2009/ http://www.iniciativafocus.org/web/index.php http://www.opensourceworldconference.com/	Focus Initiative is a partnership initiative, open to society and particularly concerned about its development. Therefore, the defense of free knowledge is our priority. Focus Initiative works to focus on promoting the use of free software and free knowledge, by organising and participating in events at every chance.
Thai Hotline	Internet Foundation for the Development of Thailand (Thai Hotline), 108 Bangkok Thai Tower Building, 10 th Floor, Rongnam Rd., Phayathai, Ratchatewi, Bangkok 10400, THAILAND	www.thaihotline.org http://www.inetfoundation.or.th/	It is an attempt by Internet users and Internet service providers to reduce all illegal and harmful materials or access to them on the Internet. The Hotline will develop consistent, effective and secure mechanisms for exchange of illegal content reports and encourage cooperation among members for rapid response to illegal content to make the Internet a safer place for every user.
Mobile Voices (vozmob)	Annenberg School for Communication, University of Southern California, 3502 Watt Way, Los Angeles, CA 90089-0281	http://vozmob.net/en	Mobile Voices (vozmob) is a platform for immigrant workers in Los Angeles to create stories about their lives and communities directly from cell phones. Vozmob helps people with limited computer access gain greater participation in the digital public sphere.
Focus on Digital Media	N/A	Focus@Globalkids.org	FOCUS is a cross-generational dialogue that aims to promote discussion amongst parents, teens and teachers about the powers and perils of life online.

Name of Project:	Address:	Web:	Summary:
The Alliance of Youth Movements	N/A	http://youthmovements.howcast.com	The Youth Movements How-To Hub brings together youth leaders from around the world to learn, share and discuss how to change the world by building powerful grass roots movements.
Engaged Youth	Center for Communication & Civic Engagement, Department of Communication, Room 125, Box 353740, University of Washington, Seattle, WA 98195 USA, 206-685-1504	http://www.engagedyouth.org/	The CCCE Civic Learning Online project explores the question of how informal online environments can effectively engage the citizenship and learning styles of younger generations.
Speak Up	15707 Rockfield Boulevard, Suite 330, Irvine, CA 92618, Main Phone: 949-609-4660	http://www.tomorrow.org / http://www.tomorrow.org/speakup/index.html	Speak Up is a national initiative of Project Tomorrow (formerly known as NetDay), the nation's leading education nonprofit organisation dedicated to ensuring that today's students are well prepared to be tomorrow's innovators, leaders and engaged citizens of the world.

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