# New Media in Pakistan

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Connecting Asia and Europe Through Arts and Culture

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*Introduction*
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This study offers a quick look at what is happening in the area of new media in Pakistan. Who are the people? Who are the organizations and groups involved? How have they gotten here? What are the similarities and differences in the new sectors?



To better understand new media in Pakistan, it is important to understand the motivation and priorities as well as the practices and context first.

In the 90's, Pakistan took on the development of its software industry as a national priority along with academic institutions to support it, identifying it as a growth sector that did not require much infrastructure.

Social indicators place Pakistan in the lower middle income category with about 50% literacy[1]. There are inadequate provision of government services such as water, national health services and social security, and severe class, economic, urban/rural, regional and ethnic divisions. In the major cities, geeks, techno-bohemians and those bitten by

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[1] http://data.worldbank.org/country/pakistan

the entrepreneurship bug rub shoulders in institutions and spaces having the distinct realization that despite the gulfs in Pakistan, much is being done and much more is possible. Why hesitate in engaging with opportunities of the new technological globalization?

**The government is generally apathetic, authoritarian and somewhat democratic, punctuated by military rule. The media supported by corporate advertising, is independent, available in many languages and tenacious in keeping a close eye. It is also booming**. Telecom services, affordable internet and mobile services have expanded beyond expectations.

Arts and culture funding is very small and politically controlled, leaving nearly all activity for independent private entities, individuals and corporate sponsors to take up. Since the late 70's, the global media's particular political focus has engendered the feeling that the real Pakistan has disappeared from radar. This feeling is true even within, where most people do not travel much, and do not know the rest of the country well.

**This short study about new media, and e-culture, supported by ASEF[2], expects rather naively to set the stage for making links, exchanges and collaborations to happen.** A process has already started through a number of actors who have been thinking in parallel ways. It includes organizing physical events and processes to connect people working in isolated and diverse areas. Another likely outcome is experimentation with social and special interest networks, to bring people together for net-based and physical events. This is so as to extend the reach, and foster future collaboration and applications of new media technologies. If the many strands can be pulled together in one place, then this paper has succeeded in its effort.

*Method*

- This study looks at the empirical naturalistic spread of activities in which new media is visible or embedded in a related sphere of activity.
- This study does not focus on 'new media art' as much as it does on 'new media technologies', their contexts and consequences.  The way they show up as art or artifacts, the way they are understood, and the related social and cultural forms they may take, are also components of the *digital culture* or *e-culture* in Pakistan. For the purposes of this study, these may be roughly synonymous phrases.
- The mapping studies we looked at included longer detailed studies such as [Monoskop](#)[3] and [Mapping e-Culture Brazil](#)[4] by Bronac Ferran[5] and Felipe Fonseca[6]. Given our limited time frame, we had to restrict both the research

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[2] http://www.asef.org
[3] http://www.burundi.sk/monoskop/index.php/Main_Page
[4] http://www.virtueelplatform.nl/en/2646
[5] Director at Boundaryobject.org, Interdisciplinary Arts Research Agency, www.boundaryobject.org, bronac@boundaryobject.org
[6] Felipe Fonseca is a Brazilian media activist and researcher, working on technological appropriation, low tech experimentation, free (live) and open source multimedia software, open licensing, experimental laboratories and online collaborations.

interaction and information gathering to something fairly realistic, while balancing the wide scope and richness of information and analysis. The response from organizations working with software companies was particularly slow or nonexistent, as compared with art and cultural organizations and its people. Some descriptions remain sketchy to be followed up in more detail in a future study.

Some of the steps we followed were:

- Brainstorming on organizations, groups, and keywords to better define what we meant by "new media" and "e-culture" in Pakistan.
- Talking to key people. Using these and other lists to send questionnaire-forms through email. This was followed-up by phone or email and in-person interviews.
- The areas were really distinct and diverse. People did not know about each other's' work. Of course we did not know about what many people were doing either. So we started from a few loose ends, a small community, in a mass of unraveled strings which connected people in diverse areas. Calls, correspondence on email and SMS reminders followed.
- In Lahore[7], Beacon House National University[8] ( BNU) and National College of Arts[9] (NCA) were identified as important places to visit where artists are using new media in their work. Lahore was also important for getting more information about software.
- A form was put together for a directory, separate from but related to this study. Respondents were asked for their basic contact information, images (and video) plus two questions on new media – for [1] individuals and [2] organizations. These were to be put in a somewhat dynamic database. The Mediamatic and Mediamatic Travel sites seemed to provide a useful model for the web format. We decided to start in a no frills version without active participation of the user, that is, without a user login facility. So all data would be entered manually once we had started gathering it.
- As the email response for the form was negligible, this placed the entire data gathering dependent on personal interaction and follow-ups. Emails did not work effectively when people were really busy to fill a questionnaire. Yet, as the format was designed to be the data for the Directory database, the information was then filled through in-person interactions.
- The database is expected to house 50-75 entries to begin with, and is expected to grow. More functions will be added to it in its future stages of development.
- As the clusters of actors and information emerged, categories were re-conceptualized during the research. Approaches and historical notes were also noted.

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[7] Lahore is the capital of the Pakistani province of Punjab, and the second largest city in Pakistan, after Karachi.
[8] Beacon House National University in Lahore (http://www.bnu.edu.pk)
[9] National College of Arts, Lahore (http://www.nca.edu.pk)

# The Public and Digital Culture



*Speaker parts for sale*

How the public encounters digital culture most commonly is while watching TV, using mobile phones, and when identification is needed. This would be records of the government, employers, banks, hospitals or marketing departments. It was not until after 9/11 that National Identification Card (NIC) records in Pakistan were moved from ancient files on storage shelves to the National Database and Registration Authority (NADRA) records, probably under the suggestion of the United States.

In the same vein, data from mobile Subscriber Identity Modules (SIMs) and the data from NICs holders was gradually brought together and linked. Prior to this, many SIMs for mobiles were issued to users without their knowledge, and traded without identity verification. Enforcement is much tighter now.

**The early exclusivity of access to new media has been successfully challenged by**

**the print, video and the internet. The advent of Photoshop[10], Youtube[11], email, interactive environments, gaming environments,  visual effects (VFX) and computer graphics (CG), which are now an increasing part of popular culture and mainstream media, have also made new media more accessible**. Facebook[12] and Twitter[13] have their increasing segments of participants too. Flickr[14] and Facebook have attracted photography enthusiasts in social networking environments. The mobile has pulled many of these developments into its screen and console, in a superb and unexpected act of mobile convergence, having won over hand-helds and laptops in popularity for now. Mobiles have integrated into lifestyles and professions in both rural and urban scenarios.

If anything, TV probably remains a weaker challenger for popular attention and as a provider of information. Live internet is commonly used when people avail of services such as Skype[15], GoogleTalk[16], MSN[17], Windows Live[18], for chatting and videoconferencing. But not very often in art.

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[10] Adobe *Photoshop* is a graphics editing programme developed and published by Adobe Systems Incorporated (Wikipedia)

[11] *YouTube* is a place to discover, watch, upload and share videos. (http://www.youtube.com)

[12] Founded in February 2004, *Facebook* is a social utility that helps people communicate more efficiently with their friends, family and coworkers. (Wikipedia)

[13] *Twitter* is a social networking and micro-blogging service utilizing instant messaging, SMS or a web interface. (Wikipedia). (http://www.twitter.com)

[14] *Flickr* is an image and video hosting website, web service suite and online community created by Ludicorp and later acquired by Yahoo! (Wikipedia). (http://www.flickr.com)

[15] *Skype* is a software application that allows users to make voice and video calls and chats over the Internet (Wikipedia). (http://www.skype.com)

[16] *GoogleTalk* is a freeware voice over Internet protocol (VoIP) client application offered by Google Inc (Wikipedia). (http://www.google.com/talk/start.html)

[17] *MSN* (originally The Microsoft Network) is a collection of Internet sites and services provided by Microsoft (Wikipedia).

[18] *Windows Live* is a collective brand name for a set of services and software products from Microsoft, part of their software plus services platform (Wikipedia).

*Editing Movies*

Opportunities for creative work were most visible in the advertising and publishing industries. Artists in general, along with writers, social development people and teachers have all been sidelined and ignored as independent actors. In fact, such vocations have yet to make themselves heard and be given their proper place in the wider society. In a way, this illustrates the enormity of what the oppressive status quo means in Pakistan. A seemingly ordinary but purposeful act can be radical because it is marginalized. References such as 'underground' or 'alternative' lose meaning in Pakistan because the most purposeful work is often radical.  The 'mainstream' is neither well defined nor dominant. That opens immense creative possibilities.

On the one hand, while the software industry has been trying to position itself globally, art, graphics, new media, culture and social development issues find themselves tied to advertising and corporate social responsibility (CSR) departments, marginalized and ignored.

Public funds for art and culture are small, and not easily accessible to all.  The institutions operate in the old mode, where either there is no audience in some cases, or decisions about programming reflect the politics of the government of the day. Thankfully, private cultural initiatives, trusts and institutions are open to new ideas and digital culture.

# New Info Tech & Development



*Cell phone revolution*

The discourse and practice of 'development' aims at managing the planned transition of weaker economies in poor, developing countries, with their specific social, economic, geographic and cultural resources and problems on a specific path led by the country's explicit development aims. **New technologies of information brought with them a few new approaches in the development sector.**

Starting in 1990, the Association of Progressive Communication[19] (APC) successfully bridged non-government organizations (NGOs) through the internet. It became instrumental in projects on advocacy or issues peculiar to the development context. While APC had been most active in South America in the beginning, other initiatives such as the International Development Research Centre[20] (IDRC), headquartered in Canada, promotes development dialogues which uses information and communication technologies (ICTs) for social development in the rural and urban contexts in several countries since 1990.

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[19] Association of Progress Communication (http://www.apc.org)
[20] International Development Research Centre (http://www.idrc.ca)

A programme of action around the concept of the 'digital divide' between the information haves and have-nots was promoted by Bytes for All[21], with Frederick Noronha writing about South Asian. Bytes for All-Pakistan[22] has been working on ICT policy issues and advocates critical access to knowledge and information for all.

While earlier approaches had used state radio and TV in Pakistan and India to reach the large populations, the new approaches proposed incorporating the internet for maximum effect. In 1998-9 the World Bank led by James Wolfensohn developed the Global Knowledge for Development[23] (GKD) initiative, an ambitious programme of consultation. The initiative sought to make the knowledge gathered from partners on the ground, available to all development practitioners, particularly community groups, by leveraging on the potential of new information technologies. They also sought to put the beneficiaries of development projects as part of an on-going consultation in design and implementation. Criticism of GKD came from many groups like PANOS[24], a group specializing in media and development. PANOS pointed out the difference between the rhetoric and practicalities of this approach. PANOS-South Asia[25] and PANOS-Pakistan work with journalists and filmmakers to promote issues and solutions regarding people and environment.

In the early 90s, the International Union for the Conservation of Nature[26] (IUCN) identified Pakistan's neglect for the environment. IUCN's dialogue with the government led to the National Conservations Strategy (NCS) and the setting up of the Ministry of Environment and the Sustainable Development Network Pakistan[27] (SDNPK), the 'information and development' wing of IUCN-Pakistan[28]. The latter is led by Isa Daudpota and Hasan Rizvi. SDNPK set up the first email network connecting non-government organizations (NGOs) working in remote areas and the cities. The network was on UUCP and used dial-up and transferred messages from user to user who acted as hubs in the network. This also led to the first email list on issues of the environment and social development. The Government later setup the Commission on Science and Technology for Sustainable Development in the South[29] (COMSATS) with similar goals, eventually eclipsing SDNPK. Today no single comprehensive list on the environment exists in Pakistan.

In the mid-90s, the world was beginning to take note of the software and call centre phenomenon in Bangalore, India. Pakistan set up the Ministry of Information Technology[30] (MoIT) under which the Pakistan Software Export Board[31] (PSEB)

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[21] Bytes for All (http://bytesforall.net)

[22] Bytes for All Pakistan (http://pakistanictpolicy.bytesforall.net)

[23] Global Knowledge for Development (http://www.developmentgateway.org)

[24] PANOS (http://panos.org.uk)

[25] PANOS South Asia (http://www.panossouthasia.org)

[26] International Union for the Conservation of Nature (http://www.iucn.org)

[27] Sustainable Development Network Pakistan
(http://www.iucn.org/about/union/secretariat/offices/asia/asia_where_work/pakistan/projects/archived_projects/proj_arc_sdnp.cfm)

[28] IUCN Pakistan (http://www.iucn.org/about/union/secretariat/offices/asia/asia_where_work/pakistan)

[29] Commission of Science and Technology for Sustainable Development in the South (http://www.comstats.org)

[30] Ministry of Information Technology MoIT (http://www.moitt.gov.pk)

developed IT parks, sought investors and provided facilitation services, in addition to creating initiatives such as the <u>Virtual University</u>[32]. The Government also allowed the establishment of private universities during the time. Along with vocational institutions, the IT departments trained engineers and workers for the industry.

This was a time of transition for Pakistan in which protectionist policies were being replaced by liberal policies and privatization of government assets. This was also the time of de-regulation. The private sector was given a freer role and gradually encouraged to participate in the media and telecom sectors, including phones, mobiles and internet services.

*Telecom*

The earliest form of an Internet Service Provider (ISP) or telecentre in the region was the Public Call Office (PCO). This was the name given to a booth found in the city or village, where one could make or receive a call after reserving it ahead of time. It also provided a messaging service. This was the 80s, when issuance of phone connections and even bank accounts was restricted by the state.

The sole telephone company, Pakistan Telecommunication Limited (PTCL), a state-owned monopoly, was gradually eroded by waves of competitive deregulation and privatization. Large mobile sets showed up followed by intense competition between mobile service companies. Competition brought low rates, better services and new technology. With an additional policy change allowing free incoming calls, the mobile phone has caught on in the landscape beyond expectations. Today, the largest advertising revenues by sector on TV are from mobile service providers which include Ufone[33], Mobilink[34], Telenor[35], Zong[36] and Warid[37].

<u>Internet services</u>[38] started with dial-ups and gradually improved in the last decade, with Digital Subscriber Line[39] (DSL) becoming available in 2002. Large entities like The Aga Than University[40] set up their own ISP. Fibre optic were laid down for faster services and digital exchanges. Internet service is now available through a variety of technologies

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[31] Pakistan Software Export Board (http://pseb.org.pk)

[32] Virtual University (http://www.vu.edu.pk)

[33] Ufone GSM is an Etisalat Group Company with presence in all the major cities with comprehensive coverage across Pakistan.

[34] Mobilink is a GSM based mobile phone operator covering major cities in Pakistan.

[35] Telenor is a GSM based mobile phone service provider.

[36] China Mobile is the world's largest telecom operator. Within Pakistan, China Mobile is known by the name, Zong.

[37] Warid has the largest postpaid cellular base in Pakistan.

[38] Internet services (http://www.internetworldstats.com/asia/pk.htm)

[39] Digital Subscriber Line (DSL) is a family of technologies that provide digital data transmission over the wires of a local telephone network.

[40] The Aga Khan University is a private international university, offering a range of programmes in undergraduate, graduate and postgraduate studies in Pakistan, the United Kingdom and East Africa.

including CDMA[41], GPRS[42] and WiMax[43]. Hotspots are common in the cities with wireless Local Area Networks (LAN) available in cafes and restaurants.

Having longer range CDMA phones like PTCL's Go have made telephone service available to areas which have no physical wire connection or even roads. The apparatus has transformed services available to villages such as in the Thar desert[44].

Having started from self-installed wires on telephone poles, cable service consisted of direct satellite downlink on dish antennas, by the neighbourhood operator who protected his turf from others. Meanwhile, deregulation opened up private TV and radio leaving behind the era of state monopoly and control. State of Telecom Industry in Pakistan[45] is a blog for developments related to ICTs. Telecom Grid Pakistan[46] (TGP) is a moderated list of telecommunications issues in Pakistan. Most discussions are industry related, and may range from the technical to status of fibre optic sea cables to policy changes made by the Pakistan Telecommunications Authority (PTA), the regulatory and licensing body. Occasionally, social issues concerns linked with telecommunications technologies are raised too.

The Ministry of Information Technology (MoIT) has set up the National ICT R&D Fund[47] and the Universal Service Fund[48] (USF) which takes a portion of revenues from telecoms and uses it to fund research, development and rural initiatives. **These are important funds to research on national concerns. The USF is particularly interested in issues of internet access to under-served areas and telecentres, partnering with telecom firms to address this**. The current government however is eyeing the funds[49]. Shahid Mir of Systems Research, who had earlier headed the Pakistan Software Export Board (PSEB) and is now in the private sector, is piloting telecentres in a number of villages.

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[41] CDMA (Code-Division Multiple Access) refers to any of several protocols used in so-called second-generation (2G) and third-generation (3G) wireless communications. As the term implies, CDMA is a form of multiplexing, which allows numerous signals to occupy a single transmission channel, optimizing the use of available bandwidth (http://searchtelecom.techtarget.com/definition/CDMA )

[42] General packet radio service (GPRS) is a packet oriented mobile data service on the 2G and 3G cellular communication systems global system for mobile communications (GSM). The service is available to users in over 200 countries. GPRS was originally standardized by European Telecommunications Standards Institute (ETSI) in response to the earlier CDPD and i-mode packet-switched cellular technologies. It is now maintained by the 3rd Generation Partnership Project (Wikipedia)

[43] WiMAX is an IP based, wireless broadband access technology that provides performance similar to 802.11/Wi-Fi networks with the coverage and QOS (quality of service) of cellular networks. (http://www.wimax.com/general/what-is-wimax)

[44] The **Thar Desert** (Rajasthani: थार मरुधर), **Urdu** (Urdu: تھر صحرا, also known as the **Great Indian Desert**, is a large, arid region in the northwestern part of the Indian subcontinent and forms a natural boundary running along the border between India and Pakistan. With an area of more than 200,000 km2 (77,000 sq mi), it is the world's 9th largest subtropical desert. (Wikipedia)

[45] State of Telecom Industry in Pakistan (http://telecompk.net)

[46] Telecom Grid Pakistan (http://groups.google.com/group/telecom-grid-pakistan)

[47] National ICT R&D Fund (http://www.ictrdf.org.pk)

[48] Universal Service Fund (http://www.ictrfd.org.pk)

[49] http://www.thenews.com.pk/daily_detail.asp?id=243516

*Computer and parts repair*


*IT & Software*

Taking a cue from the success of India's software industry, since 1995, the PSEB sought to facilitate the IT industry through IT parks, certifications, trainings, partnerships with academic institutions and promotional activities. Through its Open Source Resource Centre[50] (OSRC), it facilitates migration of companies to Free and Open Source Software (FOSS) in the IT industry, and encourages collaboration on localization and other projects[51]. Some of the reasons cited for this are lower cost and the desire to move away from 'pirate' software.

According to Fouad Bajwa, the most well-known proponent of FOSS in Pakistan:
> "...success can be attributed to various FOSS communities including the largest and oldest, Linux Pakistan User Group, boasting over 3,500 professional as well as amateur Linux users. The second largest community group is Free and Open Source Software Foundation of Pakistan (FOSSFP) and is dedicated to promoting the overall adoption, development and usage of FOSS throughout the region as well as globally. FOSSFP promotes ICT software freedom for everyone and has over 850 Ubuntu Linux user group members and over 4,900 registered certified users."

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[50] Open Source Resource Centre (http://www.osrc.org.pk/content/view/284/109/)
[51] http://www.osrc.org.pk/content/view/284/109/

On language customization he says:

> "Apart from its low-cost and free-of-cost models, its greatest benefit particularly for Pakistan is that FOSS can be localized into the 70 regional languages spoken in Pakistan. This will provide versions of FOSS that use Urdu[52], Punjabi, Sindhi, Balochi, Pushto, Saraiki, Himalaya as an alternative to the widely available software interfaces in English. Similarly, the availability of localized graphical user interfaces or visual display can be further worked upon to develop localized computing, and programming in Urdu as well as typing in domain names in Urdu into your browsers to access localized web resources over the internet."

However conversations indicate that developer communities are small and not very active, with exceptions.

Operating Systems such as Windows are in English, and not in Urdu. The [Center for Research in Urdu Language Processing](#)[53] (CRULP) remedies this by developing font scripts and other software for aiding computation in Urdu and other regional languages: Pushto, Baluchi, Seraiki and others. Word processing in Urdu using the software *Inpage* are popular but need conversion to and from UTF-8[54]. The percentage of computer users is limited to those literate in English which is less than 10 percent of the overall population. Ivan Sigal of Global Voices describes this as a "[structural impediment](#)[55]" akin to availability of electricity in terms of access to internet.

In May 2010, following the transliteration tool, [Google Translate introduced Urdu](#)[56] (Urdu ALPHA). Any page on the web, including blogs and emails, in any one of the Google translate languages can now be viewed in Urdu. Similarly Urdu pages and text can now be translated on the fly in other languages. This tool raises the potential for the free flow of ideas into and from Urdu, while simultaneously crossing the script barrier. Some cell phones bought in Pakistan have the option of Urdu text writing with Urdu letters on the phone buttons.

A number of banks are offering services on the mobile phone. Telenor-Tameers Bank's [EasyPaisa](#)[57] and Muslim Commercial Banks's [MCB Mobile](#)[58] are two of such banks. Telenor, the mobile company bought Tameer Bank, a microfinance bank giving micro loans to small setups. Their idea is to create branch-less banking while working with the State Bank of Pakistan on mobile banking rules in Pakistan. *EasyPaisa* uses open source software (OSS) and is associated with the international [Consultative Group to Assist the Poor](#)[59] (CGAP). Additional banking, financial and insurance services are expected in the future.

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[52] Urdu is a Central Indo-Aryan language and a register of the Hindustani language that is linguistically identified with Muslims in South Asia.
[53] The Centre for Research in Urdu Language Processing (http://www.crulp.org/sitemap.htm)
[54] UTF-8 (UCS Transformation Format – 8-bit) is a multibyte character encoding for Unicode (Wikipedia).
[55] http://globalvoicesonline.org/2010/05/04/pakistan-internet-and-the-challenge-of-language/
[56] Google Translate Introduced Urdu (http://translate.google.com/#auto|url)
[57] Telenor-Tameer Bank's EasyPaisa (http://www.easypaisa.com.pk)
[58] MCB Mobile (http://home.mcbmobile.com)
[59] Consultative Group to Assist the Poor (http://www.cgap.org/p/site/c/home/)

Founded in 1992, the Pakistan Software Houses Association or [P@SHA](#)[60] is the trade organization representing the IT and IT enabled service industry. Consisting of a few hundred members, it has represented the issues of the fast growing industry and advises policy in government forums. P@SHA also organizes events which provide meeting grounds for discussion on issues relevant to companies, entrepreneurs and industry players of particular sectors like gaming. [CIO Pakistan](#)[61], led by Rabia Garib, is the magazine of the IT industry. It organizes frequent 'roundtable' dialogues on topics of relevance at universities with students. CIO also has a [web-studio](#)[62] with videos of such discussions online.

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[60] P@SHA (http://pasha.org.pk)
[61] CIO Pakistan (http://ciopakistan.com)
[62] http://webstudio.ciopakistan.com

# Culture & Academic Locations



*Billboard for a TV serial*

**As a daily fact of life, Pakistani culture and other social development processes get brutally eclipsed by ongoing 'war' budgets and postures.** [Rashid Rana](#)[63] , a Pakistani visual artist, navigated through the matrix of the grid and its pixelated, real-world, perceptual counterfactuals, as illustrated in his three artworks, *Red Carpet 1* (2007)[64], *Desperately Seeking Paradise* (2008)[65] and *Veil Series I, II and III*[66] (2004).

Another artist specializing in visual narratives is [Mehreen Murtaza](#)[67]. Her world speaks of situations in which technoculture and religion mix in contemporary contexts as seen in her works, *The Trans-Channel Anxiety Buildings*[68] and *Divine Invasion*[69] (2007).

[Imran Qureshi](#)[70], a contemporary miniature painter from Lahore, has been capturing the stereotype - if not archetype - in his newer images of people and earlier paintings of missiles depicting the tension between nuclear personalities of India and Pakistan as

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[63] Rashid Rana (http://www.visitorsheaven.com/art/Rashid%20Rana.php)

[64] http://universes-in-universe.org/eng/nafas/articles/2009/hanging_fire/img/11_rashid_rana

[65] http://universes-in-universe.org/eng/nafas/articles/2008/pakistan_art_dubai/photos/02

[66] http://www.saatchi-gallery.co.uk/artists/rashid_rana.htm

[67] http://www.mehreenmurtaza.com/

[68] http://www.360degrees.tv/60x60/movie.php?movieID=40&&lookup=Pakistan

[69] http://www.gasworks.org.uk/residencies/images.php?id=465

[70] http://universes-in-universe.org/eng/intartdata/artists/asia/pak/qureshi

seen in *Moderate Enlightenment*[71] (2009), *Kagaz Kay Sanam*[72] (2001) and *Untitled*[73] (2003). The graphic work of digital illustrator Faisal Shaukat[74] recalls a world which has evolved into other technological forms like in *Experiment*[75] and *Vehicle Design*[76].

The Vasl Collective[77], an artist-lead initiative, has a resourceful directory of artists[78] including those using new media. Members of the Mauj Media Collective[79] have explored and researched new media arts and the impact of technology within the context of the city. Mauj Media Collective has usefully filled the gap between open connections, one of its self-defined roles, while following its conscious bias towards openness in technology, art, culture and social-public-environmental engagement.



*Interactive game Digital Carrom designed by Shakil Awan and Ata Kirmani*



*Mauj member Nameera Ahmed in front of the Mauj curated section of the Shanaakht Festival 2009*

Along with Vasl, Mauj has shown work at Shanaakht Festival[80] in April and November 2009, so as to involve the public. There are no festivals specific to media art, and the jump to popular festivals has not been made yet.

The internet has been explored by digital media artist Faisal Anwar[81] and *Vasl* in Karachi, linking art spaces in Pakistan, Bangladesh, Nepal and Canada at successive 'Odd Spaces'[82] shows in 2008 and 2009. In addition to the flow of works and artists, audiences could interact over the internet with the spaces in the other cities, collaboratively creating an installation. Similarly, Mauj did several projects using the

[71] http://universes-in-universe.org/eng/nafas/articles/2009/east_west_divan/photos/25_muhammad_imran_qureshi

[72] http://universes-in-universe.org/eng/nafas/articles/2003/playing_with_a_loaded_gun/photos/06_qureshi

[73] http://www.artnet.com/magazine/news/ntm5/ntm8-1-21.asp

[74] Faisal Shaukat (http://www.coroflot.com/pkorion8/profile?sort_by=1&)

[75] http://www.coroflot.com/public/individual_file.asp?from_url=true&individual_id=130581&portfolio_id=365671&sort_by=1&

[76] http://www.coroflot.com/public/individual_file.asp?from_url=true&individual_id=130581&portfolio_id=571510&sort_by=1&

[77] http://www.artscollaboratory.org/oraganisations/vasl-artists-collective

[78] http://www.vaslart.org/artists%20pages

[79] http://www.hdsatexas.com/MaujMediaCollective.org/html/home.html

[80] http://maujmedia.blogspot.com/2010/01/mauj-and-friends-at-shanaakht-2009.html

[81] Faisal Anwar (http://faisalanwar.ca/)

[82] Odd Spaces (http://www.vaslart.org/xhtml/artnow/events/2010/odd_spaces_3/index.html)

internet as a medium, such as [the Pinhole](#)[83], with *Ars Electronica*'s *'80+1'* in 2009.

It is usual to have seminars or other events broadcasted live on the web. A recent example is the  [TEDx event held in Karachi on 4th June 2010](#)[84], with another scheduled in [Lahore for July 2010](#)[85].

[PeaceNiche's The Second Floor Cafe 2.0](#)[86] (since 2007) is a hub, with a full programme of events, where both digerati and literati rub shoulders in a unique space. While other contemporary cultural spaces are being planned in Karachi, T2F's experience confirms that there is indeed an audience modulating on this wavelength.

*Academic venues*



*Editing Movies 2*

In the area of education, the use of computers and multimedia was pioneered by Zaheer

[83] http://www.80plus1.org/?s=karachi
[84] TEDx Karachi (http://www.tedxkarachi.com/)
[85] TEDx Lahore (http://tedxlahore.com/)
[86] PeaceNiche The Second Floor Café 2.0 (http://www.t2f.biz/category/peaceniche-t2f/)

Kidvai. Along with Sabeen Mahmud and Jehan Ara, he set up the department of New Media at Hamdard University in the 90's and is associated with [Beyond Information Technology Solutions[87] (BITS)](), formerly of Enabling Technologies and Solutions Unlimited. Some of the first multimedia and educational CD-ROMs came out of their work.

Multimedia institutes, such as the global chain Arena Multimedia, offer vocational education in computer graphics, animation, video editing and web design. Graduates get jobs. However, the higher end of the industry, usually a TV channel or an animation house, rely on intensive on-the-job training. Smaller technical schools do similar work.

While art education has been weak except for a few schools and departments, art departments have survived against difficult odds in the 80's and 90's producing students some of whom are now teachers. Generally speaking, new media are explored as part of the Fine Arts curriculum. At Indus Valley School of Art and Architecture (IVSAA), students are encouraged to explore digital mediums in the third year of their undergraduate degree, while at Beaconhouse University (BNU) which offers a major in Digital Art, this occurs in the second year.

At the [NED University of Engineering and Technology][88] in Karachi, the Department of Architecture & Planning has held numerous workshops to integrate new technologies into urban planning, such as one on Smart Design in old Karachi. Their Digital Architecture Group headed by Shabnam Nigar Mumtaz pursues research and practice in this respect.

Typically, in a five-year Bachelor of Architecture programme, several digital applications courses are taught using software such as Auto CAD, 3DMax, Google Sketchup. The software is also used for climate simulations. Workshops on creative digital topics are frequently held. The Department of Architecture & Planning explored an intuitive approach to aesthetics through 3D modelling, during the one-month UET Peshawar/Abbotabad's 'Engineering Duty' event. Increasingly students are given the independence to try out new software solutions, leaving behind the rather didactic 2D drafting approaches, according to Sameeta Ahmed of UET Peshawar/Abbotabad.

Traditionally, faculties of art are separate from the departments of Computer Science and Engineering. There are more than [110 departments of Computer Science][89] in the country among which are BCCI FAST, Sir Syed University, various UETs, Hamdard University, Karachi University, LUMS, BNU, Punjab University and COMSATS University.

At the Textile Research and Innovation Centre (TRIC) of the Textile Institute of Pakistan (TIP) in Karachi, technical fabrics are developed for specific applications in medicine such as monitoring the human body's parameters[90]. Researchers have

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[87] Beyond Information Technology Solutions  (http://www.bitsonline.net/)
[88] NED University of Engineering and Technology (http://www.neduet.edu.pk/)
[89] http://www.pseb.org.pk/item/industry_overview
[90] http://danishchandna.files.wordpress.com/2009/12/paper-link.pdf

presented their work on *smart* and *intelligent* textiles at various forums such as the conference T[echnical Textiles: Global Trends and Prospects in Pakistan](91) at the Megatech event in March 2010. In addition to other degrees, TIP also offers a [BSc in Textile Science](92).

In the late 90s, the Aga Khan University's Institute of Educational Development (AKU-IED), made inroads into integrating ICTs into education. They have online certificate courses connecting campuses and students in central and south Asia and Africa. There is scope for developing uses of digital technologies in the Masters in Education programme related to teachers and classrooms. In their Social Studies unit, a critical view of the use of new media technologies is being developed.

Primary schools and systems have been slow to adopt new technologies, seeing that providing basics as most essential in the Pakistan's context. Mediagarden Montessori set up by Farhat Said-Pervez was one of the earliest initiative to use ICT. Tailored for early childhood education, it used Seymour Papert's ideas developed at MIT's Media Lab with the programming language, Logo.

*Cultural Institutions*

Government institutions such as the *Arts Council-Karachi, the Al-Hamra Complex and Punjab Arts Council* in Lahore and the *National Gallery of Art* in Islamabad have hosted shows which involve new media. Among international ones, *Goethe Institute* and *Alliance Francaise* host and fund events, shows and workshops in this area on a regular basis. Mauj Collective has been supported by *Goethe Institute* in a number of projects. *Goethe* hosted a film-making workshop using mobile phone cameras on the theme 'traffic' with Till Passow in December 2009[93] with film students from Karachi University's Department of Visual Studies. *Alliance Francaise* hosted the 2009 *Odd Spaces* performance, a collaboration of *Vasl* and Faisal Anwer. The non-profit *VM Art Gallery* has hosted numerous artist shows and encourages activity in new media and digital art. *Poppyseed* and *Koel* in Karachi and *Grey Noise* in Lahore are galleries which have also hosted shows with new media art works.

*Networks*

One of the most promising activities is the interlacing of the internet and networks on the ground, like the environmental group [Earth-Water](94). The potential for social change is also tied up in this. Several lists and blogs are mentioned in this paper. The big advantage is being able to mobilize and connect people outside of their institutional

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[91] Technical Textiles: Global Trends and Prospects in Pakistan (http://www.fibre2fashion.com/News/textile-news/newsdetails.aspx?news_id=83481)
[92] BSc in Textile Science (http://www.tip.edu.pk/content/view/45/81/)


[94] Earth-Water group (http://groups.google.com.pk/group/earth--water)

boundaries and restrictions. The role of such activist networks has been tested in the military governments ouster in 2007. We have yet to see what other consequences follow from this. Some of the other groups are: <u>CultureSOS</u>[95], <u>Bloggers Association of Pakistan</u>[96], <u>People's Resistance</u>[97], and <u>Digital Activists of Pakistan</u>[98].

In sum, support for new media is limited:

(1) by resources
(2) by new media being seen as something at odds in the Pakistani context, although decreasingly so, and
(3) by being a late entrant

Positively speaking, it is the right time to learn lessons from India, Brazil and Bangladesh's experience, while building on the unique and groundbreaking work in Pakistan. Artists and institutions are just turning a corner in new media work.

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[95] CutlureSOS (<u>https://groups.google.com/group/culturesos?hl=en</u>)
[96] Bloggers Association of Pakistan (http://groups.google.com.pk/group/blogap)
[97] People's Resistance (<u>http://groups.google.com.pk/group/PeoplesResistance</u>)
[98] Digital Activities of Pakistan (http://groups.goggle.com.pk/group/Digital-Activists)

# Film & TV



*DVD shop*

During the 70s, the Pakistani state made a decision to put its energies into the state-owned Pakistan Television (PTV) rather than cinema. The emphasis on using these mediums for furthering the state agenda had historically been rather strong. The military president Ayub Khan's speeches were shown to captive audiences before the screening of the movie itself. The film industry deteriorated. It lagged behind in technological improvements such as colour labs and Dolby sound.

Through the 80s, soap operas on national TV were popular and well-produced. They even had a loyal following in India. News and information was very tightly controlled by the state or the military. It was not until 1988 and through the 90s, that news media in print gradually became less controlled. Meanwhile, the new media technologies of digital cameras, video editing and digital sound were making their presence felt. Independent media channels were given licenses in 2002 following regulatory changes[99].

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[99] http://www.pemra.gov.pk

Newer cameras and personal computers made it easier to enter into media production. However, with the many TV channels opening up since, there continued to be a shortage of trained personnel and programming in general. Skills were mostly learnt on-the-job without formal training. Many outfits that had started as support systems renting out equipment and spaces, became private production houses in an experimental phase, until the channels set up their own studios and stabilized financial models.

In parallel, independent producers were making innovative music videos and advertisements. People who have experimented in this area include Jami with music videos, Shahzad Nawaz with the telefilm *Daira* based on Mohsin Hamid's novel *Mothsmoke, Moomal Productions* of Hum TV and Geo TV's productions.

The full impact of the new digital equipment has however not been realized as yet. The pattern is relatively set. Independent production has fallen. There is no independent or government funding. In contrast to a mandated policy such as BBC's to give out programming to independent producers - a democratic imperative to produce content that is relevant to the under-represented - the Pakistani channels for now are producing their own content, perhaps compensating in other ways.



*Pakistani cinema*

While the old cinema with its studio system - which was not exactly thriving - declined sharply in the 80s, digital cameras spurred filmmakers to make full length movies. The first digitally shot film *Raat Chali hai Jhoom Ke* by Hasan Zaidi could not reach a full audience because no digital projectors existed and conversion to 35mm was extremely expensive. It was only very recently, in 2008, that Mehreen Jabbar's *Ramchand Pakistani*, a fully digitally-shot film, made it to the screen as a 35mm.

The impact of the portable digital camera and editing facility has not been seen in film as much as in TV. According to [Karafilm Festival][100]'s Hasan Zaidi, there has been a deep reluctance to support digital equipment by companies who would rather keep the old film stocks rolling for analog cameras.

Meanwhile the debate on the merits and demerits of the new-versus-the-old continues. In the last decade, this has hardly changed except that there is now a greater demand for digital tools and work as more and more filmmakers come see the convenience. In the large cinemas halls, there is reluctance from owners in an already depressed market to switch to digital projectors. That situation has remained unchanged. Among alternative venues, the Karafilm Festival is highly successful with an international presence. Smaller film festivals are organized by galleries and cultural centres.

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[100] Karafilm Festival (http://www.karafilmfest.com)

# Computer Graphics and Post-Houses

Some of the earliest people doing computer graphics (CG) and animations worked at a one-stop post-production house called [The Carrot Company](#)[101] that began in 1994. Imran Mir the CEO hired AG Khalid as Director of Design and Motion graphics and supported his training in 2D animation and compositing using Matador Software on Silicon Graphics computers. This was in order to create advertisements for the Muslim Commercial Bank (MCB). AG Khalid later became the Art Director for [The News](#)[102], designing the layout for its launch as a newspaper in 1991, and for ARY Digital TV channel when it was launched in 2000-02. Among other pioneers is [Muqeem Khan](#)[103], a visual effect artist with Walt Disney and Square USA, who has worked on movies such as *Deep Rising, George of the Jungle, Flubber, Armageddon* and *Final Fantasy* (1999).

Starting in the late 90s and continuing since, like in the rest of the software industry, many local multimedia and animation companies have taken on outsourced work from US clients. Since 2002, the company [Post-Amazers](#)[104] has taken on international work in 3D animation and special effects. [Ice Animations](#)[105] has also been working on international movie projects. Many of these companies are also associated with the local advertising industry making advertisements for them.

[CGExpanse](#)[106] is a Pakistani online forum for digital graphics artists. The forum is a place to showcase and critique experimental or on-going work in 2D, 3D, characters, environments and games. Rehan Zia who teaches in the UK is a supporter of this project. Rehan is also working on setting up an academic programme in digital art at the [Indus Valley School of Art and Architecture](#)[107], Karachi. Apart from the ones mentioned, there are no other visible organizations or groups of digital artists.

**The 'post-house' has been around to support the making of advertisements, but expanded when the newly deregulated TV channels outsourced productions. They provided specialized services, equipment and space on short or long term basis**. As mentioned in the Film and TV section, in this experimental phase, finances were shared between channels, independent financiers, corporate sponsors and production houses. Eventually this led to a contraction when channels setup their own in-house facilities, having worked out new models of finance. Animation houses have carved their own niche in this small industry.

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[101] The Carrot Company (http://www.pakistaneconomist.com/issue2000/issue19&20/company_profile7.htm)
[102] The News (http://www.thenews.com.pk)
[103] Muqeem Khan (http://www.muqeemkhan.com)
[104] Post Amazers (http://www.postamazers.com)
[105] Ice Animations (http://www.iceanimations.com)
[106] CGExpanse (http://cgexpanse.com/phpBB2)
[107] Indus Valley School of Art and Architecture (http://www.indusvalley.edu.pk)

# Broadcast, Alternative & Tactical Media



*Editing and dubbing*

Forms of new technologies, new media and new communities frequently shake up old ideas of freedom, frontier, and millennial liberation. These changes traverse boundaries, resisting authoritarian bureaucracies and corporate control while opening up global meshes and landscapes of communication. Regardless of the role of fantasy in this, this has played out in Pakistan in unlikely forms.

Through the 90s, journalists, newspapers and news on TV and radio were tightly controlled and manipulated. The exceptions were those in English language which had a select but limited readership, which was not much of a threat. Mobile phones, not yet affordable for everyone, could be shut down in entire cities on government orders, to stop communication within and prevent information from getting out on a particular military or police crackdown on a political group. Email was starting to spread.

Since 2002, the deregulation of TV, radio, cable, internet and other controlled arenas highlighted the opening up of the economy to foreign investment and of the vibrancy of markets within. On the face of it was the journalists and their unions testing the boundaries, resisting control as they had done traditionally. It was shocking to see Hameed Haroon, CEO of a large media conglomerate, Dawn Media Group, making a

public appeal using email[108] and over the internet. Later when the CEO of Jang Group was harassed, email was used again to spread the news and garner support. The email campaigns were successful in winning over a critical group whose support turned the tide against the government. When Naeem Bokhari, a lawyer sympathetic to the military government, accused the Chief Justice of wrongdoing, he used the same means which ultimately failed for him. The military government eventually weakened and fell. Is it possible to conclude from this then, that email and internet have promoted a democratic tendency in this case? Many commentators, including [Huma Yusuf][109] and Fiza Fatima Asar in their research papers, agree with this.

In this tug of war, PEMRA, the regulatory body, became the henchman. As tensions heated up, information and coverage of micro-events could not be controlled despite forced shutdown of news on TV and radio channels. Some media groups complied and signed the government's Code of Conduct[110]. A few large media groups had taken an anti-military government stance and won. Media had decisively slipped out of government control.

Coverage of the earthquake in 2004 in northern Pakistan mobilized people in the rest of the country to jump to the task[111] of helping the affected. Doctors, students, plumbers, businessmen and professionals organized supplies and flocked to areas to help in person. The government's mismanagement of the relief effort was reported, as the independent media and a spontaneously mobilized public, found new roles.

[108] http://pakistaniat.com/2007/03/27/pakistan-dawn-newspaper-pressure-letter-email-hameed-haroon/
[109] http://civic.mit.edu/blog/convergence-and-disturbance-new-media-networked-publics-and-pakistan-0
[110] http://www.dawn.com/2007/11/13/top6.htm
[111] http://www.bitsonline.net/earthquake/2005/10/government-initiatives.html

*Mobile phones for sale*

The newly independent media with 24-hours of non-stop 'breaking news' was experienced as a chaotic and unruly tide by people used to watching 'ribbon-cutting' ceremonies on the state PTV. The mobile became the live audio link to radio and TV shows. Journalists reported and kept in touch with colleagues using their mobiles phones. In some cases, they have used live video feeds over Wimax internet broadband connections in the city, as an alternative to using the DS/ENG van. The Long March in March 2009 to restore the displaced judiciary was called after a mobile conversation at Gujranwala by the new army chief while travelling between Lahore and Islamabad.

During the Lawyer's Movement which led to the fall of the military government, the media covered the events in every detail. During that time, spontaneous groups of people had joined the traditional ones in a civil society campaign against the military, using various means on the internet, blogs, email, mobile phones, SMS, flash-protests, flash-events, street protests, street theatre, and even inviting banned talk-show hosts to hold the programme on the streets[112].

Many channels such as Geo, Aaj, ARY, Royal and FM103 radio were physically shut down. GeoTV's satellite broadcast was disconnected for 72 days. They fought it from

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[112] http://ipsnews.net/news.asp?idnews=40253

their Creative Department[113] by broadcasting more news about the crackdown over the internet, and via free SMS-alert subscription, posters and promos rallying for freedom of expression, ad campaigns, street festivals, concerts and protests.

Civil society groups and individuals tried software such as Ushahidi[114], FrontlineSMS[115], and CoverItLive[116] a crowdsourcing console and aggregator of feeds from twitter, RSS and SMS which can be embedded on blogs and websites. Seen Report[117] and Chopaal[118] developed by Umar Saif in Lahore, were also used, besides a plethora of newsletters, updates and magazines. Blogs were an important source of comment in the diversity of views not found anywhere else. During the Long March the *#LongMarch* hashtag topped Twitter for a while.

The last assessment is that new media and the internet are under-utilized by channels, and could be suitably developed in ways other than just for news-reporting or crisis strategy. User interactivity is getting better for a few newspaper websites, with regard to integration with web video and blogosphere, user comments and social networking. See Dawn[119] and Express Tribune[120].

The segments of civil society involved in the above activities, the practitioners and the larger audiences of such media become important for progress on a vast number of entrenched problems. There is no doubt the public sphere was enlarged and is healthier as a result. But many issues in Pakistani society remain inadequately discussed and addressed.

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[113] http://www.youtube.com/watch?v=nsGoA_zhtCg
[114] Ushaidi (http://www.ushahidi.com)
[115] Frontline SMS (http://www.frontlinesms.com)
[116] CoverItLive (http://maujmedia.blogspot.com/2009/03/pk-long-march-netlive.html)
[117] Seen Report (http://longmarch.seenreport.com)
[118] Chopal (http://www.smsall.pk)
[119] Dawn (http://www.dawn.com)
[120] Express Tribune (http://tribune.com.pk)

*Electronic Market, Karachi*

A significant number of people do not have access to mobile phones, TVs, clean drinking water, proper sewerage facility, health care and physical security. Fazal Noor, a development consultant, describes it as a 'caste' situation[121] for large communities which are marginalized, from which people are unable to get out. The basis of this difference is economic. However, sometimes being a member of a religious minority, gender, or having a particular kin and lineage group in a regional context are the reasons for the divide.

Sixty-five percent of the population are under the age of 25. In this group, even less opportunities available to girls and women. There is lawlessness, tribal/group social practices which need rooting out in practice, the abysmal business of government, and other social problems.

In a way this section goes to the heart of the argument of this essay. The most fundamental questions are here: why media is good, why language, why technology, why new media and why culture? **One way to think about a response to these is that media provides a means to re-organize the social, through personal involvement**. The new chaotic media has not only a serious area of contention but has

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[121] http://centersocialchange.blogspot.com/2010/03/social-change-in-pakistan-and-south.html

captured the personal imagination, mind and time of the people. Yet, the degree of dissatisfaction by various groups also indicates the diversity of interaction and response to media content. **The agitation and discontent is a reaction and reflection of what is happening in Pakistan, given the influence and, frequently, self-censorship of the broadcast media itself.**

With the Facebook affair in May 2010, the whole of Facebook, Twitter, Blackberry, proxy servers and sites totalling about 1600 in number were shut by court order to protect the public from information, and possible conflagration and mayhem on the street. The main argument presented was the <u>Islamophobia and anti-Muslim tenor of Facebook</u>[122] in not curtailing flagged content by millions considered insensitive, designed to inflame sensibilities and in Pakistan's context, provoking destructive behaviour.

**In sum, the cat and mouse game between journalists, people and the military government over control has now turned into a veritable circus which is undoubtedly chaotic and may even be more democratic by a few degrees.**

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[122] http://teeth.com.pk/blog/2010/05/31/faceblockistan

# Piracy, Hacking & Copyright

*Piracy & Copyright*



*Film DVDs for sale*

Digital data can be copied easily. The market for pirated software and entertainment has thrived. There are big markets in every city. Pirated material is distributed within Pakistan and across the world. As an organized market of traders, they have strong monetary links with law enforcement agencies. Raids and campaigns happen from time to time, but mostly when software giants like Microsoft put pressure on the government for copyright enforcement. The traders have managed to evade law enforcement agencies because there is a thriving 'informal' market, which is able to limit the effectiveness of any enforcement campaign, while catering to the market. Inbound material such as movies and sitcoms from the US come through China and Russia while Indian movies come from the UK. Much software has come from Thailand such as the Panasoft 2000, a software supplier which was active in the 90s.

The traders had earlier used larger punching machines to copy CDs and DVDs, but as this became more difficult, they switched to smaller machines with dispersed

operations in the city. While they have also gained expertise in the new formats from WAV, MP3, MP4, DIVX and XVID, much content is now downloaded from the internet.

The positive aspect of the thriving piracy market is that much software and entertainment material is now inexpensively available to a wide number of people. Debates at The Alternate Law Forum (ALF) - Bangalore[123], and Sarai - Delhi[124] suggest that "black letter" approaches to copyright issues are bound to fail as cultural and historical consequences of copyrights are not being factored in.

"There are clearly major limitations of such a traditional black letter approach, particularly since it does not have the ability to adequately reflect the larger public interest concerns embedded in these forms of regulation of knowledge and cultural commodities. With the rise of information technology and the transformation of the ways in which information was produced, intellectual property has emerged a site of major conflict, encompassing conflict over legitimate production of goods and legitimate production of meaning. An important shift in legal scholarship around IP has been the recognition of the importance of understanding the cultural implications of certain forms of intellectual property protection, the social and historical contexts in which cultural proprietorship is (or is not) assumed, and the manner in which these rights are (or are not) exercised and enforced to intervene in everyday struggles."

## The ALF-SARAI Collaboration on "Intellectual Property and the Knowledge/Culture commons"[125]

Jeebesh Bagchi of Sarai makes the case that as traditional "fuzzy" knowledge loses ground, copyright regimes are eroding what is left of the commons, and indeed the global commons. The situation in Pakistan is similar.

Increasingly, American films dubbed in Urdu are available locally. There is also a TV channel on cable which shows films dubbed in Urdu, which might raise related questions in a new way. Urdu dubbing makes the movies' narrative, plot and ideas more accessible to Pakistani viewers beyond the eye-candy of sex and violence. On the other hand, Geo TV and its label Aag have been able to protect their copyright in the market.

*Hacking*

The most well-known hacker from Pakistan goes by the moniker, Dr Nuker. Most of the notoriety comes from taking the India-Pakistan nuclear rivalry into cyber space[126]. Dr Nuker highlighted the issues of Kashmir and Palestine, and shown interest in the India-Pakistan nuclear rivalry which occasionally flares up since both tested bombs in 1998. Dr Nuker then hacked the website of the American-Israel Public Affairs Committee[127] (AIPAC) in 2000. S/he is also associated with the Pakistan Hackerz Club (PHC) which

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[123] http://www.altlawforum.org/intellectual-property/ip-and-the-knowledge-culture-commons

[124] http://www.altlawforum.org/intellectual-property/ip-and-the-knowledge-culture-commons

[125] http://www.altlawforum.org/intellectual-property/ip-and-the-knowledge-culture-commons/intellectual-property-and-the-knowledge-culture-commons

[126] http://www.articlesbase.com/internet-articles/cyber-wars-between-pakistan-and-india-373872.html

[127] American-Israel Public Affairs Committee (AIPAC) (http://www.aipac.org/)

seems to target Indian sites. Dr.Nuker may be more than one person and in fact could represent a number of groups. The US department of Justice had identified Dr Nuker however this was repudiated[128].

The more innocuous sort of hacking also has a history going back to passwords for dialup connections in the mid-90s. A group of medical students had been hired to install software for new connections by a phone company and ISP, PTCL. A way to login to the dialup connection without entering any passwords through a combination of keys worked for some time.

Prior to that, the 'first known virus for a PC'was a programme written to protect unauthorized copying of content on floppy disks. This came to be known as the Brain virus[129] which contained the address of the writer and the company for further inquiries.

*Electronic Crime Ordinance 2007*

Under criticism earlier in the year as an oppressive and vague law, the Electronic Crime Ordinance 2007[130] was brought into effect 'secretly' on Dec 31, 2007. It lists eighteen offences which Federal Investigation Agency (FIA)' Cyber Crime Unit is authorized to investigate, tried by a seven-member tribunal.

Apparently intended to bolster the capacity in dealing with cybercrimes[131], it follows on the earlier legislation in 2005 on electronic transactions and intellectual property by focusing on issues related to terrorism and the internet. This law does not protect ordinary citizens rights from severe punishments[132] including life imprisonment and death penalty, with the implication that its application will be arbitrary and punitive. In addition, the method of its introduction and timing under the military regime's crackdown on free expression in 2007, raised concerns as to its actual intent.

*Freedom of Information Ordinance 2002 and Local Government Ordinance 2001*

These two pieces of legislation are right-to-information (RTI) laws, which were brought in to make public records accessible to citizens and the media. They were introduced to increase transparency and accountability in the government at various levels concurrent with legislation on decentralization. However, they remain underutilized as means of public information about candidates and their records relevant to elections. RTI laws were tested by Naeem Sadiq a campaigner for transparency with poor results.

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[128] https://news.hitb.org/node/4279
[129] Brain virus (http://www.f-secure.com/v-descs/brain.shtml)
[130] http://www.amlaw.pk/blog/2008/12/10/electronic-crime-cyber-crime-ordinance-act-law-credit-card-fraud-spam-spoof-forgery-malicious-online-internet-pakistan/
[131] http://www.amlaw.pk/blog/2008/12/10/
[132] http://ipsnews.net/news.asp?idnews=40879

*Electronic Crimes Act 2009*

Described by watchers as rehashing of the earlier *Electronic Crime Ordinance 2007 & 2008,* it is being known for its political misuse.

# Games & Gaming



*Inside a cybercafe*

As in other places the earliest digital graphics were ascii pictures, seen on single-color screens or dot-matrix printouts. Popular electronic games started with TV and arcade games such as by *Sega* and *Nintendo*, and hand-held devices such as the *'Game & Watch' Donkey Kong* and *Mario Bros* by Nintendo. Some of the TV-game, Atari and *Streetfighter* were multi- user games.

Arcades could be found in all parts Karachi in the mid-80s with coin-operated machines built locally. The multi-player game *Dungeons and Dragons* never caught on in Pakistan. Network games like *Doom* gained popularity in 1993-94. LAN game sessions were organized by hooking them up one's own PCs in a room with others, sometimes in school. These sessions could last several days.

The commercial alternative came in about 2000 when used hardware could be hooked up in multi-user gaming saloons. *Half-life*[133] and *Counterstrike*[134] with movie-like narratives caught on in 1999-2000. *World of Warcraft* 's subscription arrangement kept participation low. The iPod's became popular and easily available when they were re-configured locally to work with local service providers. Pakistan Gamers Community[135]

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[133] Half-life (http://store.steampowered.com/app/70/)
[134] Counterstrike (http://store.steampowered.com/app/240/)
[135] Pakistan Gamers Community (http://www.pakgamers.com/forums/)

is a forum for gaming enthusiasts.

In 2000, Faizan, a student from BCCI FAST[136], made *Shahzore,* a video game similar to *Streetfighter,* with Urdu and local characters. Shehryar Hydri of *Trango Interactive,* a game development company in Islamabad, created the arcade game *Sheera Jutt* which halted due to funding and marketing constraints. Shakil Awan and Ata Kirmani of *Mauj Media Collective* developed Digital[Carrom][137] which received encouraging web reviews by gaming sites.

Another FAST graduate Tamjid Tirmizi made a 'fake' *Commando 4* using a game generation kit based on the Kashmir conflict. Students at FAST and Sir Syed University made Karachi maps for *Counterstrike.* Such small groups who have been working on game initiatives need support and involvement in larger projects.

Recently in May 2010, PSEB and P@SHA sponsored the World of Mobile Apps and Gaming session at the Expo Centre in Karachi. Talk of mobile-games dominated over social network games. Many companies, particularly in Lahore and Islamabad have jumped on the trend to build applications and games for Apple, Microsoft, Blackberry, Google or Nokia who have opened up developer tools. Some of the Pakistani companies making them are *Folio3, Trango Interactive, Tintash, Converge, TkXel, Geni Team*, and *Mindstorm* Studios. Many do business in the US, Europe and in the Far East, or have offices or parent companies there. PSEB's Imran Zia is working out an internship programme in game development for IVSAA students under Qazi Fazli Azeem.



*Gaming*

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[136] BCCI FAST is a university for computing and engineering sciences in Karachi.
[137] Digital Carrom (http://www.insidesocialgames.com/2010/05/10/bringing-international-games-carrom-to-facebook/)

# Health & Harm



*Mobile phone market*


*e-health*

The Indus Hospital in Karachi is a [paperless hospital](http://www.indushospital.org.pk)[138]. It uses an integrated system in which patients are identified through wristbands which link them to their medical records.

The Aga Khan University in Karachi uses [eHealth](http://www.aku.edu/chs/telehealth_in_developingworld.shtml)[139] in a number of ways, such as telemedicine, telehealth, informatics or e-Learning at its medical and nursing colleges and hospital. One of the projects which their Community Health Service (AKU-CHS) is refining is the use of SMS in tracking and communicating with patients in dispersed locations whether in a city of rural area. This involves reporting body temperature levels of patients or simple reminders of vaccination appointments in Mardan and Gilgit, according to Dr Hammad Durrani of the department of Community Health Services at Aga Khan University, Karachi (AKU-CHS).

Another approach combines telemedicine with telecenters under the Ministry of

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[138] Indus Hospital (http://www.indushospital.org.pk)
[139] eHealth (http://www.aku.edu/chs/telehealth_in_developingworld.shtml)

Information Technology's (MoIT) Universal Service Fund[140] (USF), a fund which plans to build a large number of telecentres[141] in rural areas of Pakistan. People would be able to get medical specialist's advice in remote areas. A similar project using voice recognition in the local language for community health workers is Healthline[142], which is being developed by Jehanzeb Sherwani at Carnegie Mellon University, USA.

*e-Waste & Used Computers*

Karachi has been one of the dumping grounds for global e-waste as highlighted in Greenpeace's slideshow on Lyari by Robert Knoth[143], along with other places in the world. The dark side of new technologies come to fore in this urban nightmare scenario where computer and other electronic waste is scrapped. Metals, wires and components are salvaged using the unhealthiest methods, sometimes by children working in appalling environments.

A long term preventive measure calls for life-cycle assessment of these technologies at the design stage of all new devices, so that an audit of its environmental e-waste when the equipment retires can be assessed. This would be useful when medical or other electronic equipment is considered for purchase by major buyers like hospitals. The specifications and documentation should be made available so as to help make better decisions.

On the other hand, used hardware that comes to Pakistan by the shiploads provides inexpensive computers for use by ordinary people. A certain lobby of the computer industry tried to push a ban on used computers[144] which described this act as e-waste dumping. The ban was reversed under public pressure and media reporting.

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[140] Universal Service Fund (http://www.usf.org.pk)

[141] http://www.usf.org.pk/project.aspx?pid=14

[142] Healthline (http://www.cs.cmu.edu/~healthline/)

[143] http://www.greenpeace.org/international/en/multimedia/multimedia-archive/Photo-Essays1/scrap-life-pakistan-with-rob/

[144] http://pakistaniat.com/2010/03/07/used-computer-repair/

*Conclusion*
# Culture of Human-Machine Entanglement

It is irresistible and desirable. It is a necessity, a convenience, and a reminder of the future.

How do we make sense of it? How do we make sense of this entanglement? Is it war, or can there be a balance? Or is there some more certainty regarding what it means to be human in this post-technological, or conversely post-human world?

If we want look at how people and technologies interact, merge, and form new configurations of hybrid organisms in Pakistan, we might consider the following questions: How do people use technology, or are going to use technology? How are people going to develop it? How are people accepting, rejecting, putting up with or getting affected by technology?

In all of this there is the mesh of everyday life. There are compelling trends, conveniences, new inconveniences, side-effects of new technologies and harmful situations. The social and cultural consequences are immense and complex. Everyone is affected. All spheres are affected.

The challenge is to meet the momentum of this wave, welcome it, re-evaluate it, re-use it and re-purpose it for own agendas. Some we do consciously, but even then some things never get noticed, or are just impossible to contend with.

–   end   –

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## General Acknowledgments

**MAUJ MEDIA COLLECTIVE**

Karachi Pakistan


Mauj aims to use open technology, art and culture to empower society and people.

Our projects engage regional and international participants and audiences. MAUJ explores the phenomena of new media arts and the impact of technology within the context of the city.

- Mauj **connects**. Artists and scientists have worked in isolation from each other for a very long time. Mauj provides a common platform for them to work and collaborate together.

- Mauj **networks**. Scholars, curators, social scientists, artists, computer scientists, galleries, entrepreneurs, engineers, universities, cultural organizations, find each other through Mauj.

- Mauj **collaborates** with both organizations as well as individuals on creative projects.


Mauj has participated in and organized a number of events since February 2008. These include a panel discussion on media art in Nov 2008, a media and activism panel in April, 2009, workshop for art critics on writing for new media art in April 2009 and a live Dance off collaboration with partners in the UK, Colombia and Brazil in Oct 2009. From October 2010 to March 2011 Mauj created an onsite, media installation titled "City in Nature" during their residency at the Mohatta Palace Museum in Karachi. This exhibit was part of the show titled "Rising Tide" which showcased more than 25 contemporary artists of Pakistan.

**Atteqa's Notes**

My communication with Jereneja Rebernak from ASEF began during preparation for a summit on New Media and Art, Policies and Practice in Singapore in July 2008. It was at this summit that the then newly formed Mauj Media Collective from Pakistan was introduced via a presentation at the ASEF premises to an international group of media artists and practitioners from all over the world.

In the following years, Mauj had a number of exchanges with some of the artists present at the summit. ASEF was one of the main supporters for two of the collaborative projects that Mauj participated in at that difficult time when Pakistan was crossed off most international cultural funders' lists.

During those years, in the context of the new media discussions I was experiencing online and at international events, I was questioning myself and my peers if a media lab was legitimized only if it existed as an institution? Could it not also be an individual or define itself within the systems of a self- sustaining city? The fantastic transitions and experiments that I was witnessing as a result of a new media revolution on the streets of Karachi kept convincing me that some kind of documentation of our immediate environment was urgently required during this fleeting time of change.

Fortunately, at that time, an initial requirement for a mapping study of New Media in Pakistan came from Jerneja after which a proposal was cemented by end of 2009 following numerous exchanges between Jerneja, Yasir and myself. I was glad to work on this project as it really felt like we were covering new realities that now existed due to the presence of very cheap communication facilities all over Pakistan. All of a sudden, knowledge was there for those that knew where to look for it. How was it changing the way people behaved with each other and thought of their own lives? I hope sharing the information in this document will enlighten readers regarding a few, technologically backed players who will be affecting the future of Pakistan in the coming years.

Atteqa Malik
14th July 2011