



Position statement/written contribution

for the

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Medea

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Abstract

In this position paper we will argue that powerline communications (PLC) if widely deployed in the limits of working document COCOM03-32 will

(a) sacrifice a huge creative potential -- of technological playfulness -- beneficial not only to European citizens, but also to European businesses and administrations

(b) risk a valuable tool in technical education and training

(c) reduce cultural diversity

(d) sacrifice a scarce global resource in increasingly globalizing times in spite of adequate substitutes

(e) shift scarce financial resources away from more efficient means of accelerating broadband deployment in all social groups

(f) have a negative impact on developing countries.

On our Organisation

Medea, Verein für Medienarbeit (association for active media work), founded in 1998 in Linz, Austria, strives to advance competence in media use, especially in socially deprived groups and migrants.

We have been carrying out a large number of projects as well as long-running programmes in the field of radio, video, internet, photography as well as other media. Our largest project at the moment is "Pangea", <http://www.pangea.at>, a public access internet lab, aimed mainly at migrants in Linz, Austria. Over the years our organisation has made it possible to hundreds of people in the region of Upper Austria to get a hands-on experience in media. But we also research into art-related possibilities of media, and their use in culture.

On this Written Contribution

This paper does not intend to discuss the technical details of PLC interference to Amateur Radio and AM Broadcasting. For this we point to the detailed and technically sound contributions of e.g. the IARU (International Amateur Radio Union) and other contributors. We take this as a fact.

But we have to add, that practical experiences with PLC in the deployment here in Linz, Austria, where we have our office are fully in line with above statement.

(a) The Radio Spectrum Below 30 MHz as a Resource for Technological Creativity, Playfulness

We concede that the practical utility of radio spectrum below 30 MHz has been increasingly reduced over the last two or three decades in the industrialized countries. Shortwave broadcasting was never that important in relatively densely populated Europe with broadcasters serving comparatively small areas. Medium wave AM broadcasting has been diminished in its importance as well with the wide deployment of FM technology. Shortwave Coastal stations have been replaced by satellite communications on a wide scale. What remains today are niche users, some military applications (certainly better argued by these stakeholders) and the "playful" uses:

Amateur Radio, DX (long distance) Broadcast listeners, CB hobbyists and artistic uses, on which we want to concentrate in this paper.

Only at first sight wide-scale deployment and economic feasibility of new telecommunications systems and media are the only limiting factors to a success in the long run. Past experience has shown that quite often new technologies remain in a stillborn state, because there are no interesting or plausible uses for them or there are no adequate business models, while others, from technological standpoint far less complex applications, become an instant success all by themselves.

As Andrew Odlyzko points out in his essays "Content is Not King" [1] and "The Many Paradoxes of Broadband" [2], often the right business model in telecommunications is found out by chance, by trial and error, by experimentation. Where WAP did fail, SMS was a huge success. Not because the one was technically superior, but because SMS's social character was more desirable.

If the success of SMS was a pure accident, not the result of careful planning, as it is often said, to us the only solution for finding successes like it can only be to make more experiments, to play around, to find new applications of technology by fooling around with it. This is what many, if not most radio amateurs do. Finding new, creative uses from existing technologies, combining them in new, never thought of ways. While most radio amateurs do not have the huge development budget of commercial entities, they do have a wide array of technical qualifications and a rich global infrastructure for experimentation.

By deploying PLC on a wide scale, and essentially jamming most of the frequencies central to the amateur radio service (and therefore destroying most of this global infrastructure), this pool of experimentation into usage models will be dried up within years, once the frequencies below 30 MHz become unusable.

As a side note, this would happen at the moment when the decisions of the WRC 03, in granting new frequency allocations to amateur radio, but even more importantly, with the dropping of the Morse code requirement, led to an upsurge of interest in amateur radio and to a rejuvenation of its practices and character, by removing no longer needed barriers of access to this field.

As one example of creative uses of communications technology, which had the potential of productisation right from the beginning, I want to mention APRS, the Automated Position Reporting System (www.aprs.net). It could be called the noncommercial predecessor to products like the Garmin Rino (www.garmin.com/rino) and some 2G and 3G location based services.

(b) Amateur Radio as a Medium of Technical Education and Training Relies on Sub-30 MHz Spectrum

One of the main tasks of Amateur Radio today is the education and training aspect. The decisions of the WRC 03, opening the short wave to interested Radio Amateurs without Morse code proficiency added further momentum to this aspect.

The part of the electromagnetic spectrum most affected by PLC interference, the medium- and short wave frequencies are also those most useful for training and education. Especially to projects with school children and young adults. These frequencies are most apt for hands-on experience.

Self-construction projects like the one found at <http://www.qrpproject.de/> and in many Books dedicated to teaching basic electronics theory, can be completed even by rather unexperienced school children and give valuable, practical experience in communication electronics. These projects would be completely useless in a PLC-connected environment.

(c) Sub 30 MHz Spectrum Applications and Cultural Diversity

While short wave and medium wave AM broadcasting no longer has a central role in Europe in the dominant majority cultures, these media, which are heavily affected by PLC as outlined in Cocom03-32, have a crucial role in providing culturally diverse voices in the realm of electronic media, when it comes to migrant and cultural minority populations.

For many of the lesser-spoken languages, short wave radio is still a valuable tool, even in the era of satellite communications, due to its different and vastly lower cost structure.

While we applaud making broadband internet more accessible to EU citizens, it should not be the marginalized groups of migrant populations in Europe that have to bear the negative side-effects.

(d) Sacrificing a Global Resource in Spite of Superior Substitutes

While having more alternative suppliers is always good for the consumer in a free market, PLC is neither the only, nor the most practical additional option to the already existing, and widely deployed ones: Cable internet and ADSL/xDSL.

Other alternatives, like - most importantly - various wireless solutions, but also satellite access and fibre to the home incur a lower cost to the short wave spectrum, which represents a scarce, global resource. Therefore these solutions should be favoured over powerline broadband.

It also has to be said, that previous field trials of PLC have shown a rather humble performance when actually deployed in the field (as opposed to tested in the lab). Various wireless solutions have been in use in production for years - with acceptable reliability.

(e) Scarce Funds for Increasing Broadband Usage Could be Better Spent

National governments as well as various EU bodies go to great lengths in funding and subsidizing broadband internet. Medea, as an organisation devoted to making media and technology more accessible to the general population strongly support these measures.

Nevertheless it has to be said - and we see this every day in our work with mainly migrant youths - that broadband internet is still out of the reach of wide parts of the population who are less well-off.

While, of course, we support funds being used for structural measures, like increasing competition in these specific markets by creating more favourable regulatory frameworks and funding research and deployment, these actions and policies can not replace financial help to those who will never be able to afford broadband internet, even in a very competitive market.

A balance has to be found in these conflicting ways (market liberalization vs. helping the socially less privileged) of increasing broadband internet use in the population. With all the negative side effects outlined in this paper, quite frankly, we do not think

that putting financial funds and investing into PLC technology would be in the best interest of Europe's citizens, and even less for those excluded from these technologies.

(f) Negative Consequences for the Developing Nations

In previous sections we pointed out negative consequences of a wide deployment of PLC in the discussed limits to the EU. But these are not the only consequences worth considering.

The developing countries - where short wave radio is still very much a part of daily life, and often the only practicable form of electronic mass communication - will suffer very much from the planned measures (which will make AM broadcasting unusable for all practical purposes in European urban areas).

In today's globalised economy funding of product development and research has to be spread among many markets to be feasible at all. It is hardly conceivable that new developments in HF communications could be funded by developing nations alone.

This fact not only applies to the actual radio sets - just like any piece of consumer electronics - wildly dependent on economies of scale, but also to broadcasting equipment heavy in development costs.

With the EU (and in a similar vein the United States) "getting rid" of short wave broadcasting, this could create massive problems to many nations, which rely on these technologies.

References

*[1] Odlyzko, A., 2003, "The Many Paradoxes of Broadband", in: First Monday, peer reviewed Journal on the Internet, issue 8_9
http://www.firstmonday.org/issues/issue8_9/odlyzko/index.html*

*[2] Odlyzko, A., 2001, "Content is not King", First Monday, peer reviewed Journal on the Internet, Issue 6_2,
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