Titanic Quarter Limited
Titanic House, 2 Queen's Road
Queen's Island, Belfast
Northern Ireland BT3 9DT

T: +44 (0) 28 9076 6300
F: + 44 28 9045 5086
E: info@titanicquarter.com
W:www.titanicquarter.com

Ref: MG/Leb2
25th June 2008
Ms Chinyelu Onwurah
Floor 2
Dept: Strategy and Market Developments
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Dear Ms Onwurah

Re: Next Generation New Build Consultation

Please find the attached response from Titanic Quarter Belfast, to Ofcom's Condoc, for your consideration.

Please can you acknowledge receipt of this submission.

Yours sincerely
Michael Graham MRICS
Director of Corporate Real Estate
Titanic Quarter Ltd
Titanic House
Queen's Road
Queen's Island
Belfast
BT3 9DT
Tel +442890 766303

Titanic Quarter Limited
Titanic House, 2 Queen's Road
Queen's Island, Belfast
Northern Ireland BT3 9DT

T: +44 (0) 28 9076 6300
F: + 44 28 9045 5086
E: info@titanicquarter.com
W:www.titanicquarter.com

RESPONSE TO OFCOM CONSOLTATION: 'Next Generation New Build'

1. Titanic Quarter

Titanic Quarter is an urban mixed-use regeneration of a 185-acre site in central Belfast, Northern Ireland. Formerly the Harland & Wolff shipyard, this massive project is described in detail at www.titanic-quarter.com . A short descriptive video is available for download. The €1.5bn development has been identified by the Urban Studies and Planning department of MIT as one of a handful of world-class sites designated as 'New Century Cities'.

In its initial phases Titanic Quarter will include:

- up to 5,000 residential units,
- a Financial Services Centre with first occupant the banking organisation Citi
- a new integrated campus facility for Belfast Metropolitan College, serving 17,000 students,
- several major new and historic tourist attractions, hotels and public spaces,
- the new HQ for the NI Public Records Office
- and a world-class Creative Media campus clustered around the 'Paint Hall' studio complex.

The Queen's Island site already houses the 25-acre Northern Ireland Science Park with a multi-user Innovation Centre, an electronic communications and information technology research institute for Queens University Belfast and a purpose-built software development centre for the global bank Citi. Furthermore the site is at the centre of an extensive public sector trial of broadband mobility utilising systems conformant to the recently-approved IEEE802.20 Standard. It is expected to house the hub of the European Centre for Connected Health announced in January 2008 and will be competing for large-scale advanced data-centre facilities to serve the fast-growing market for 'cloud computing'.

The longer term plan will extend Titanic Quarter to 15,000 households, several hundred business organisations and will become a focus for major entertainment events, exhibitions and conferences.
With a clustering of knowledge-based enterprises and the need for Titanic Quarter to compete in a global market, the requirements for the local network infrastructure were, even before construction work began, vastly in excess of the limited capabilities of last generation copper networks.

It is in the context of:

> the need to compete against non-UK sites with advanced networks,
>
> an escalating network demand growth particularly for much higher upload speeds and the capacity to handle concurrent activities and serving the needs of the distributed workplace models of knowledge-based multinational enterprises,
>
> our long-term construction-industry planning view that retro-fit investment would be inefficient,
>
> and where it is clear that the required facilities cannot today be assured by established providers,

that leads us to the view that we must directly address what can only be described as 'infrastructure market failure'.

2. Today's requirements and tomorrow's expectations

As indicated in our response to last year's Ofcom NGA consultation, as responsible developers we cannot afford to take the risk of inadequate infrastructure provisions to meet either current needs or future expectations.

The local network infrastructure is required to match a modern world-class development – a very basic requirement that generally exceeds the conditions prevailing across the UK. It is simply not possible to market this type of advanced urban development without providing occupants with certainty of delivery in terms of network capabilities, services innovation and future-proofing.

We therefore instigated a study to identify potential solutions. The challenge was to identify a fully adequate network infrastructure that would be economically viable both now and in the future – bearing in mind that expectations in terms of capacity/speed, resilience, symmetry, latency, reliability and throughput quality (packet loss and jitter) are all expected to rise as network services dependencies increase for all residential and business occupants, visitor support, public safety, environmental and other operational/estate management functions.

Beyond the purely technological attributes of the network it was also considered essential that the infrastructure design served to increase the competitive choice of services available to occupants and encourage both services innovation and community cohesion.

In a new build environment we recognised that we have some advantages over regeneration schemes in areas that are already littered with last generation networks. However, the solution we identified and are now deploying is most commonly used elsewhere for 'overlay' schemes to replace or compete with, out-classed/limited copper and cableTV networks.

When considering the cost of a new fibre network, and moreover, a future proofed Point-to-Point FTTH design that is designed to bolster competitive service choice, it is important to consider how revenue growth can support the initial investment and ongoing operational management costs.

There has been much debate regarding the challenge of creating a viable business case for access networks that utilise fibre. In the context of 'new build' environments it is true that some costs (e.g. for duct provision) may be relatively lower than in 'overlay' schemes where the complexities of avoiding or replacing existing urban infrastructures may add to the costs. At the same time, however, the costs of the opto-electronics and management systems required to fully exploit the new capabilities of fibre networks are significant – particularly if these networks are to stand the test of time and enable service innovation.

It is also true that in new developments that include a high proportion of multi-dwelling-units there are relative cost savings in terms of fibre routing – but these pale into insignificance when set against rising consumer expectations of network performance. It would, for example, be extremely short-sighted to impose on increasingly service-dependent consumers the same lack of resilience that is a feature of conventional point-to-point copper networks. In a mixed-use development occupied by knowledge-based enterprises as well as tech-savvy households it is essential to avoid any single-point of failure that might put at risk their requirements for effective Service Level Assurances needed to underwrite their own sectors' regulatory conformance criteria.

We observe that there are very few 'new build' sites with sufficient scale to compete with the investment attractiveness of much larger 'overlay' schemes. The notion, therefore, that the business case for NGA is easier in 'new build' environments is not necessarily valid.

Our study showed that in delivering a fit-for-purpose access network, the key to viable investment is to ensure that the use of the network (and hence revenue) is maximised. This in turn demands that each fibre to each home or business unit must be capable of *concurrent* delivery of *multiple* services from *multiple* service providers. This economic model is possible if there is complete management separation of the local Access utility network from the Services that consumers choose to access through it. We have therefore adopted the 'Open Access' wholesale model which, in Sweden, is currently serving 192 (out of 290) local communities and uses technological components that have been well-proven over the past 6 years.

In this 'Open Access' model the local network operator does not sell any retail Services to end-users. The use of the network is sold (on a wholesale basis) only to interconnecting Communications/Service Providers (CPs). End-users (household consumers and enterprises) purchase Services in the normal manner from any CP that has agreed to interconnect with the local access network. It is entirely the responsibility of the interconnecting CP's to decide what Services they will offer to this local market – but no CP is constrained by the limitations of a last generation copper network. CPs will offer a wide range of symmetric or asymmetric packages with throughput capacities and service qualities to suit the consumers' applications needs and affordability criteria. With growing demand for HDTV and many other bandwidth intensive services, symmetric broadband Access at 100Mb/s is expected, as in other European countries, to be increasingly popular

A further challenge faced by any developer arises from the need for an Active network to be managed independently of any CP. Property developers are not naturally expert in the management of networks. In the UK there are few organisations with the skill-sets, experience and facilities-base for this type of 'carrier-class' but 'carrier-independent' network management operation – a role that includes the recruitment and relationship management of interconnecting CP's.

A valuable insight into the role of the independent network manager again comes from Sweden where the early network investors (mainly local energy utilities) found that the resources required to encourage ISPs and Telco's to be innovative and imaginative in Services development had been significantly under-estimated.[1]

The rapid proliferation of ISP's (and multiple service choices for consumers) in Sweden is now a reflection of the success of the Open Access investment, facilitated in part by organisations such as StadsNats, the Swedish Urban Network Association working closely with and encouraged by the Swedish telecoms regulator PTS.

The management requirements for independent (non-CP) access networks are not widely understood in the UK because of the industry legacy of vertical integration and an inherent competitive deficit that has only recently been partly (and inefficiently) remedied in some areas by the imposition of Local Loop Unbundling. The practicality of the Titanic Quarter network proposal therefore hinged upon finding a satisfactory management solution. The appointment of the fully qualified independent network operator will be announced shortly.

Titanic Quarter is of the view that, with its presence (via the Harcourt Group) in the wider property development market, there is considerable scope for promotion of a new type of independent network management enterprise. This emergent actor could play a significant role in addressing another UK deficit – the relative non-engagement (with a few excellent exceptions) of Local Authorities and Regional Development Agencies in community network infrastructure development. This community non-engagement seems to have persisted despite increasing devolution from Central Government of responsibility for infrastructure to support economic growth and societal development.

The final element of the Titanic Quarter solution lies in gaining, in advance of the infrastructure investment, assurances that CP's will be prepared to interconnect with the network. The interconnection issues in respect of CP's different management and transaction systems can add an extra cost burden and hence reduce operational efficiency for the local network. There are as yet insufficient independent local access networks in the UK to encourage the development by CP's of standardised transaction interfaces but this now appears to have been overcome in more-advanced countries.

[1] In the UK's 1st generation broadband market competitive differentiation amongst CPs has been restricted to only a few capacity options and service packaging with non-broadband services such as fixed and mobile telephony. The relative lack of facilities-based differentiation appears to have led to a very heavy dependence on price-differentiation and criticism of misleading marketing claims surrounding network performance.

The initial interconnect position for Titanic Quarter is already in place with Bytel Networks providing their 'Open Access' wholesale backhaul network to any CP who wishes to connect to the dual Core Nodes without incurring the expense of laying direct cable. It is expected that a choice of several IPTV providers, telephony (VoIP) providers, Internet Service providers and other specialists network services will be available to all occupants from the moment that they arrive on site.

We acknowledge that our requirements are forward looking and represent a determination to give Titanic Quarter a degree of competitive differentiation. We do not, however, believe that the type of Open Access solution developed for our 'new build' environment is invalid for other 'overlay' schemes. Our responses to Ofcom's consultation document should be read in the context of Titanic Quarter's intent to address, albeit locally, some of the issues arising from the UK access infrastructure market failure.

3. Response to Consultation Questions

***Question 1**:*

What can Ofcom do to encourage timely standards development for new build NGA wholesale access products and interfaces?

> We fully endorse Ofcom's assertion that: *"the key test for effective competition is …….. the level of choice customers face in the services on offer to them."*
>
> Since wholesale access is a fundamental requirement of competitive 'Open Access' NGA (in both 'new Build' and 'overlay' environments) it is not surprising that the technical issues of interfaces (for both traffic and management systems) have already been resolved by the leading manufacturers. Such is the rapid development of this market that in Sweden we found home-grown competition in the specialist provision of management systems to deal with multiple CP's and to provide consumers with convenient service portals for supplier selection.
>
> In the Open Access context NGA investors do not need encouragement to provide wholesale access. It is not part of the Titanic Quarter design to limit the use of the network or to make exclusive choices on behalf of consumers – everybody is welcome.
>
> Further encouragement and positive support from Ofcom would be welcome in the development of templates for Open Access NGA interconnect agreements between CP's and independent local operators. This would potentially reduce the burden of CP recruitment and be in line with 'best practice' examples in more-mature markets.
>
> The consultation document appears (perhaps inadvertently) to assume that the last generation design approach of vertical integration will be carried forward into the next generation era. The obvious scope for exploiting the new capabilities of fibre networks to transform the competitive landscape and consumer choice does not therefore seem to have been clearly articulated as a base-line assumption in Ofcom's thinking.

Which industry body is best placed to undertake the standardisation of these products and interfaces?

If any new industry body is required we would recommend close study of the Swedish Urban Networks Association - StadsNats – providing a collaborative forum for the independent (carrier neutral) local access network operators. It is interesting to note that alliances are now being formed between similar associations across continental Europe and it would seem likely that UK local network operators would gain much from their greater experience.

In the UK, organisations such as the Community Broadband Network and the Communications Management Association may be potential contributors to a collaborative organisation with a strong consumer-led focus.

The potential role of Local Government and Regional Development Agencies in conjunction with Water and Energy Utilities seems not yet to have been fully recognised in the UK. In the context of this specifically 'new build' consultation we would observe that the corporate real estate sector can, and is, making a significant contribution to the raising of infrastructure standards and levels of investment. These contributions seem not to be fully reflected in Ofcom's perception of stakeholder significance at a time when traditional Telco's have shown extreme reluctance to invest in NGA.

What action should Ofcom take if these standards fail to materialise?

In the unlikely event of such standards (or their effective deployment) failing to be recognised it will most probably indicate a high degree of obstructive and anti-competitive defensive behaviour by established CP's reluctant to face market reality, or, alternatively, that Ofcom has failed to encourage a sufficiently robust independent access network management sector.

As can be seen in other more-advanced countries the impact of conventional incumbent behaviour leads directly to a sharp decline in their market share in independently-managed local network areas. The under-served and digitally disadvantaged areas of non-coverage shown on maps of fibred communities in Sweden are those where the only network available is managed by the former incumbent Telco. In our own local context of Northern Ireland (and nearly 25 years after privatisation) there are only two local exchange areas where BT is judged *not* to have retained 'Significant Market power' (SMP)

We do not believe that there are any major technical issues that have not already been resolved elsewhere but we would observe that a lack of competitive resolve is a major issue.

We therefore commend the Ofcom Consumer Panel's recent production of a video that illustrates the UK deficit and we would recommend that Ofcom should give far greater publicity to Access network exemplars from other countries.

***Question 2**:*

Do you agree with Ofcom's approach to promoting competition and consumer choice in new build fibre access deployments?

We do not believe that in 'new build' environments it will ever be economically viable to encourage the deployment of multiple new fibre Access networks.

We believe that encouragement should be given to the development of consumer choice in Services and the highest possible standards of Access network design.

Whilst we understand Ofcom's position on technology neutrality (it is for network investors to choose systems and network design) we do not believe this should extend to tolerance of a competitive deficit in terms of Service choices and innovation or a deliberate lack of future-proofed capacity. Such difficulties would however only arise in the context of 'closed' vertically-integrated developments that restrict choice and appear, by design, to be inherently anti-competitive.

Given the considerable advantages of well-designed point-to-point fibre networks relative to last generation copper loops – especially in terms of resilience, latency, symmetrical capacity, packet loss and jitter – we do not believe that there is any practical validity in the argument for competing local fibre NGA networks.

The possibility of poor designs being deployed would however test the limits of Ofcom's declared position on technology neutrality. We would therefore encourage Ofcom to promote sensible design guidelines and proactively inform consumer expectations in this regard as a preventative measure against potential market abuse.

***Question 3**:*

Do you:

(a) believe that the existing obligations must be met by replicating the existing copper products, or that an alternative approach could be satisfactory? What are the implications of replicating existing products on fibre?

Many of the current obligations are intended as remedies for the last generation's inherent inadequacies. We consider that it would be nonsensical to view the design of NGA as a direct replacement for the increasingly inadequate legacy copper networks.

The second part of this question would seem only to apply in circumstances where the transforming potential of fibre was not recognised by the infrastructure investor.

As stated earlier the only viable model for extensive NGA investment that we can identify (excluding of course massive public subsidy) is one that maximises wholesale revenues.

(b): agree that SMP holders rolling out fibre do not need to roll out a copper network in parallel solely to meet their LLU obligation?

We agree that it should not be technically necessary to provide an additional copper network and we are not convinced that any CP would seriously wish to compete via copper against an Open Access fibre network.

In the Open Access model the question of LLU does not arise because Services and Access are, by design, never bundled.

(c) agree with Ofcom's approach in relation to WBA and new build areas?

As previously indicated, and discussed directly with Ofcom, Titanic Quarter fully supports the wholesale position that is the foundation for its Open Access investment model.

(d): believe that the WLR obligation must be met by replicating the existing copper product, or that an alternative approach based on an ALA type product would be satisfactory?

We do not believe in the necessity (or desirability) of copper replication.
As indicated above, we see the Active Line Access position as the default option and would not describe it as an 'alternative'.

(e): believe that the CPS obligation must be met by replicating the existing copper product or that an alternative approach based on an ALA type product would be satisfactory?

We believe that competitive choice of Services should mean, for all consumers, easy and rapid (and preferably fully automated) facilitation of switching between alternative CP's. This is an inherent attribute of the Open Access model. Carrier Pre-Selection is another example of a regulatory remedy that becomes irrelevant in the Open Access NGA environment where retail Services are not confused with wholesale Access.

(f): believe that the IA obligation must be met by replicating the existing copper product or that an alternative approach based on an ALA type product would be satisfactory?

Answer to (e) above again applies to Indirect Access..

(g): agree with our proposal to interpret GC 3.1 (c) as being met through the provision and use of a battery backup facility to maintain uninterrupted access to emergency services in new build developments?

We fully agree with Ofcom's position on the adequacy of battery back-up and would also observe that this need not only apply to the 'new build' environment.

Question 4: Do you think access to the duct network, including non telecoms duct, is a potentially feasible means of promoting competition in new build? If so what types of commercial and operational models could successfully support such access arrangements in the UK?

In the 'new build' environment, which by implication does not have an existing duct network, we do not at this time see any financial or operational justification for not providing ducting dedicated to accommodation of the local fibre NGA network. This position reflects our concern for the highest level of maintenance and security – and the avoidance of interference by other utility operatives.

We can however see that in the context of regeneration schemes where some existing telecoms ducting is unsuitable, inaccessible, geographically non-optimal for the new building layouts, or simply not available for economic sharing, there may be a good case for collaboration with water/drainage or energy utilities providing that the NGA network integrity is not compromised.

In much the same way as it seems unlikely that anyone would encourage competition between local water pipes or drainage systems, in large-scale 'new build' environments such as Titanic Quarter we have not identified any economic scenario that would support *multiple* local Open Access utility networks.

As developers of many different types and sizes of sites across many countries, our Dublin-based parent company Harcourt Ltd would be pleased to make further contributions to this debate beyond the immediate consultation context of 'new build' environments.