

**Comment on the
Licensing Framework
for Third Generation Mobile Services**

**The need to define the structure of
content service provision.
or
'What are we auctioning?'**

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The need to define the structure of content service provision.

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Summary.

The consultation papers make references to:

- 'open access'
- 'separation of network and services'
- 'development of the telecommunications industry' (which, in view of the nature of 3G, the author considers must include the policy of developing the local IT industry introduced by the CE,)

The consultation paper include brief references to 'content', but consequences of of control over access to content, permission to erect 'gateways' and 'walled gardens' have received no consideration whatever.

Probably because content has not, to date, been an issue in mobile telecommunications, its importance have not been addressed and seem to be confused with other service applications.

This paper aims to bring the issues of content provision and access to the attention of the reader so that the relationships between can be more widely discussed and the implications of an future licensing decisions better understood.

Notably, the commercial attractiveness of a licence to operate a network is very different from that also enabling control over content. It is absolutely necessary, therefore, to understand exactly what is being auctioned before any auction takes place on a level playing field.

The author concludes that, given the stated policies, the licences offered should be solely for the operation of a network and that content provision or control - of any kind - should not be permitted by the licensee. Only with this framework can users enjoy the freedom of access now available in fixed network, can the wider local industries share the development benefits and can it be claimed that the system accords with the free-market principles so fundamental to Hong Kong which encourages enterprise of any size.

However, if different conclusions are reached, it is mandatory that the rationale or overriding policies behind such conclusions, are made public and that the outcome of the terms of licences awarded are fully thought through.

1. An aim stated in the paper

In Para 2.3.1 of the OFTA paper, the following 'primary objective' regarding the telecommunications industry and consumers is stated in the context of licensing procedures:

'To better achieve the primary objectives of promoting the development of the telecommunications industry and maximizing consumer benefits, the TA proposes.....'

Although this was stated in the context of licensing methods, it must be assumed that, as a 'primary objective' it applies to all matters in the 3G environment. Also, it must be assumed that reference to 'industry' means 'Hong Kong industry' - for obvious reasons.

2. The wider Government aim for the IT industry

Apart from the above 'objective', the whole point of a 3G network is its fast data handling capabilities. Whilst the public demand for high speed data may, indeed, promote the development of the telecommunications industry, it has the potential to greatly benefit another Hong Kong industry which has been singled out by Government as being of prime importance: the IT industry.

This industry is largely concerned with provision of information - that is, 'content' and 'content-related services', which will be made available to users of the 3G networks.

It is of prime importance, therefore, that this aspect be fully dealt with in the discussion of the licensing of 3G networks. The outcomes of such licensing could be a truly open access by users and an important catalyst for the development of local content providers. Alternatively, it could lead to the creation of an oligopoly of globalized information providers with no benefit whatever to the Hong Kong IT industry (notably SMEs) - which is otiose to broader government objectives.

Put another way, it is of prime importance to debate and answer the rather basic question: **'exactly what is being auctioned?'**

Regrettably, the consultation process has not address this matter but, in talking about 'service provision' focuses mainly on the concept of Mobile Virtual Network Operators (MVNO). References to 'content' only appear in paras. 2.3.11 and 2.3.12 - and, even then, it is linked with 'service applications'.

The purpose of this paper is to try to have the full implications of 'content services' and 'content-related services' more fully discussed in order that the eventual licence conditions are not determined simply by default.

3. Four types of service.

The can be four fundamentally different types of service within a 3G network:

- a) **Network provision** either by the network licensee or by an MVNO which leads to a connection between two or more terminals.
- b) **Content provision** as typified by 'one-way' broadcasting, VoD and parts of the internet.
- c) content **dependent services**. The internet has created a wide range of content-dependent services with which a user interacts such as e-commerce, games and specialised information provision.
- d) **provision or carriage of information** which is factual and which it is not necessary to edit. This category contains e-mail, person-to-person communications, positional information of the subscriber, time, timetables, stock market information, racing results etc.

Services **b)** and **c)** are fundamentally different from the other two in that they are the result of 'publishing business' which constitutes, by far, the greatest part of the industry contributing to the internet.

Type **a)** has been discussed in full in the consultation paper and the concept of the MVNO is well understood as being a means of encouraging competition in the retail and network services areas. However, the remainder are not differentiated and all put into same the bag. Appendix I details the references found in the paper which illustrates the confusion.

The situation probably arises because the consultation is primarily about new mobile **telecommunications networks**. Traditionally, these have only been concerned with one-to-one communication. The concept of 'content' is a new one to those involved in telecommunications regulation although it is, of course, the very essence of broadcasting regulation.

Notwithstanding the years-old talk about 'convergence', the regulation processes are still seen through different spectacles with, inevitably, different views of the world. With 3G, 'content' is its reason for existing, like broadcasting, and the outcome can no longer be allowed to simply come about by failure to think through the implications.

4. Type b) and c): Content and content-dependent services

Media activity layers

In any medium involving content, there are the following essential activity layers:

1. Creator of content
2. Publisher
3. Technical Packager
4. Transporter
5. Unpackaging

This can be applied to all media such as print, CDs, broadcasting, internet etc. In every case, these layers can be found, there is interface identified - often with commercial implications - and 'technical' standards to make it all work.

Each level can have a number of sub-levels and may be closely related the prime purpose of others. However, no medium can exist without activity in all of them.

In the internet, **b)** and **c)** type of service, these layers are embodied in:

1. The people who create the material on a web site
2. Publisher. There are two sub-layers:
 - a) a business of providing information, entertainment or news etc. (type **a**)
 - b) a service, in which information is an integral part, with which the user interacts. (type **b**)He will engage people at level 1 to create the structures for these.
3. Technical Packaging. There are two sub-layers:
 - a) packaging the publishers concepts into working software. This is the technical outcome of layer 1
 - b) the ISP
4. The telecom. network operators. There can be many sub-layers to this.
5. The users' hardware and software devices which are compatible with the technical specifications of level 3.

The present situation of the internet is that anyone can become a publisher in layer 2 and, through the interconnections which have historically evolved, know that his product will be available to everyone at level 5. It achieves the ideal of the 'open network'.

5. 3G Content and Ownership structures

From the consultation process so far, there seems to be general agreement on the aims of 3G networks in respect of content

- separation of network and services
- open access to information.
- the wider development of 'the industry' (meaning the local IT & Telecomms.)

The ownership structures of 'Telecommunications Service Providers' is adequately set out in the OFTA paper. It proposes to allow MVNOs and service providers with a maximum requirement of access based upon a commercial relationship between the partners. Another way of looking at this is that an MVNO or a service provider is a public service provider who 'outsources' provision of the radio network to a 3G licence holder.

In respect of ownership affecting service types **b)** and **b)** (para 3), the matter is not addressed. There are many possible variations of ownership structures of the layers with the extreme cases being:

- full 'vertical integration' which means that the consumer has access through his network operator to only one ISP and one publisher. This is the situation of the traditional broadcasters and what seems to have been allowed in the allocation of the European 3G licenses.
- the opposite extreme where all layers are owned by many different entities - as in the situation enjoyed today by internet users.

According to what evolves in the ownership structures, there is a range of things which could happen when a user of a 3G terminal decides to look for information:

- i) he will be presented by a portal owned by the network operator leading to many other sites under the same ownership. He will have no access to anything else.
- OR -
- ii) as in i) with the addition of independent sites permitted by the licensee or ones which have agreed to sign a commercial agreement with the operator.
- OR -
- iii) he will be presented with a portal owned by the network operator which contains a means of access - which is difficult to find - to other content-related service providers or the rest of the internet.
- OR -
- iv) Equal visibility is given to all services whether they are provided by the network operator or by others.

- OR -

- v) there will no content or content-related services provided by the network operator at all -- it will be an open network as is the internet at present.

Which of these happens in our future network is entirely dependent upon what is being licenced: the right to operate a network or, additionally, authority over the manner in which content is accessed together with editorial control over that content.

6. Revenues in respect of Content

Just as the licence conditions will determine what content the users will be allowed to access, so will it determine the sources of revenue.

In the cases above:

- i) the revenue is derived from the licensee's own sites and portals of which he is the publisher in layer 2. By creating a gateway at layer 3, (packaging), he does not permit access to any others as they are regarded as competition which could diminish this revenue.
- ii) as in i) with the addition of revenues which he 'sub-licences', on a commercial agreement, to pass through his gateway at layer 3.
- iii) as in i) but his licence requires that he allows access to all service providers and the whole internet without charge through his gateway. His licence does not contain a clause which requires him to give equal access so he tries to hide the buttons!
- iv) as in iii) but he is required to give the user equal visible access to the internet and his own site.
- v) the licence does not permit him to be in business in layers 1 and 2 at all. Beyond that, there are two possibilities. If he is involved at all, in layer 3, it may be purely technical. he may also provide uneditable information type d) (para 3)

Revenue is also derived from usage. If the network operates under option i), the usage revenue might be reduced in order to persuade people to make more use of the owner's content services - from which he probably gets the largest revenue. However, in going to the other options, greater competition enters his network and he will charge higher usage fees. In the case of v), his sole income is from usage unsubsidized by content provision.

7. Choice of ownership structure for licensing

Ownership which gives the user type i) and ii) (in para.6) access will lead to an oligopoly (meaning a set of monopolies all with similar aims and cultures) of large media organisations dominating information and e-commerce. It will rather be like commercial television in most countries. When there was only a small number of competitors - as in the early days of TV in the UK - one licensee said, rather undiplomatically, that it was 'a licence to print money'.

Thus, just at a time when broadcasting is moving towards being more open and internet is well established, mobile content and 'm-commerce' would become dominated by the large global media organisations with very little place for lesser companies and SMEs.

Type iii) reduces the power of the oligopoly but it would be dishonest to allow it instead of type iv) - equal visibility of access.

For user access, the best possible solution is structure v) where the 3G licences give the right to operate a network only. This accords with the present structures of content provision of the internet.

The advantages of this are:

- it is the option which best meets the objective of the open network.
- it most accords with the broader principle, so well established in Hong Kong, of the free market economy.
- the results of the above will be an encouragement for SMEs to innovate and develop a wider range of services which, in turn, provide business outside of Hong Kong. By contrast, ownership by overseas corporations will tend to result in an 'import' of overseas services instead of innovating local ones.
- it requires that licensees concentrate their resources and competition in the field of telecommunications network provision. This is important because it is only the large global players who will have the ready-made content resources. This will put the smaller organisations, whose resources will be split between network and content development, at a disadvantage.
- content will not be dominated by global media corporations with a further loss of local identity and culture. News and other information will not be only that which is acceptable to the global owners.

There may well be strong resistance to the proposal to limit the 3G licences to providing the network only. The argument is that an operator, having providing wide band communication should be allowed to provide innovative services for his customers. However, the question arises "where is the borderline between 'innovative services for his customers' and 'dominance of the content market by virtue of network ownership'?"

The question must also be asked as to whether a completely free market, including SMEs, might produce more innovative services than an oligopoly. Hong Kong is often held to be

an example of how encouragements of SMEs can lead to greater economic development. To do otherwise with 3G would seem to be counter to this well-established benchmark.

The consultation document seems to want to separate the accounting of network provision and other services (presumably including content provision) on the basis that one should not support the other by the method of 'bundling'. If this is the case, if he is deprived of the trade-off decisions between network and content, there is no commercial argument for the operator to provide content at all!

This leads to reference to 'non-affiliated companies' and 'affiliated companies'. It is difficult to understand why, if network operation is to be kept separated from other services, it is necessary to make the differentiation. Does it mean that a service provider within the same commercial group of a network provider is considered to have special privileges? This is not explained.

8. 'Move Up the Value Chain' and 'The Walled Garden'

In recent times, two new notions have been started to enter the language.

"Move up the value chain": The old concept of telephone network operators is that they provide a service of interconnection. In more recent years, these networks have come to carry many other services, not all of which are provided by the network operator. Indeed, in the case of IMS, the regulator required that it be separated from the network operation. Applied to 3G, "Moving up the value chain" means an operator will not be restricted from providing and owning these other services which add value to his network. This certainly makes a licence to operate 3G a greater business attraction for the operator but, if he controls all the content and other applications, it may not be so good for the consumer -- nor for the wider industry of smaller service providers.

"The walled garden": Having "moved up the value chain" and created content and applications, the licensee can create a "walled garden." This charming euphemism sounds like something for stopping little boys from stealing your apples but is, in fact, designed to stop the fruits of the labours of SMEs getting into the market. In other words, for "walled garden" read "monopoly" -- or at least "control."

The Hong Kong Government loves to tell us that our present wonderful mobile system has only come about because of competition and the free market. But global corporations cornering the application market, requiring sole rights to SMEs' services, closing the gateway to a "walled Garden" to outsiders when they think fit and deciding what news we get does not sound much like the free market that has supposedly benefited us to date.

Finally, there is the question: 'Is it desirable to allow a near monopoly - or an oligopoly sole editorial rights over 'news' and similar information. The writer does not intend to address this but it probably the most important question for an emerging democracy.

9. Open real-time choice of networks

If the arguments hold sway for allowing network operators to ‘move up the value chain’ and ‘create walled gardens’, then a further question must be answered.

This is “why would it not be possible for a system which requires that a user's terminal is able to access any network at any time?” Thus, a user does not 'join' one network as in G2. Rather, his terminal enables him to access, after registration, any of the networks at any time. When the only requirement - as in G2 - is one-to-one communication, there is no need for this but when content becomes the dominant factor, is there any reason why a user should not enjoy the content provided by any licensee?

3G is only partly a one-to-one network. In respect of content, it is more like broadcasting, VoD or internet in which users are not restricted to one supplier of information. It is another situation that would not arise in traditional telecommunications but is the rule in other media such as broadcasting and internet. If this idea is rejected, it reinforces the argument to have networks with no ‘walled gardens’.

10. Technical Standards

The consultation paper suggests a 'technological neutral' approach with compatibility. This discussion seems to dwell largely on the standards in layer 4 - transmission. However, it is necessary to also address the standards relating to levels 3.

It is quite possible to use common standards for level 4 but then ensure that the packaging at level 3 contains proprietary standards - such as conditional access - which then requires an 'unpackager' at level 5 of the same standard.

If these standards can be changed on a terminal by installing appropriate software, there is no problem but that is still required a mandated standard to the operating system which allows this. This is an essential requirement if portability is to be realised or if the 'open real-time choice' format is implemented.

The lessons should be learned from the broadcasting field. Whilst a great degree of standardization has been achieved in Europe in the field digital television, attempts to get operators to adopt a common system of conditional access seem to have failed. The dominant satellite operator has insisted on using his own proprietary standard and nobody can do anything about it! The concept of the ‘walled garden’ could also mean proprietary access only.

11. The proportion of 'openness'.

Para. 2.3.12 states: The “open network” requirement allows the network operators themselves to be service providers at the same time. As content and service applications are expected to be the major revenue sources in 3G business, the network licensees may retain certain network capacity for their own use or use by their affiliated companies for service provision.

However, the network licensees will be required to open a minimum amount of network capacity to non-affiliated service providers.

Para. 2.3.14 The preliminary view of the TA on the percentage of network capacity to be open to any non-affiliated service providers (whether MVNOs or resellers) lies in the range of 30% to 50%.

These clauses seem to be in direct contradiction to Para. 2.3.6 which states:

'Submissions supporting the proposals accepted that separation of service provision from network operation would allow customers to access the full variety of 3G services....'

Both clauses typify the weakness found in the paper of not defining nor discussing what is meant by 'service' provision nor 'content'.

The purport of clause 23.14 can be understood in terms of MVNOs in that they will be limited in the amount of time in the licensees network which they can sell. (although this raises some interesting questions). However, it is not understood how this percentage of usage can be applied to content provision. If the network is to be 'open', it would be impossible to impose some limit. What does it mean? That, access to information, other than that provided by the licensee, will be stopped half way through the month when users have used up all the allocated bits? This is clearly ridiculous.

Whilst it may be expedient to allow the licensee to have no more than a percentage of his network used by an outsider for providing telecommunications services, it does not seem relevant, feasible or desirable to protect his content - if he is allowed any - in such a way.

Finally, what is the definition of an 'affiliated company'? If a conclusion has been reached that it is desirable to separate service provision from network operation, why does para. 23.12 say that the network operator can provide content? What is an 'affiliated' company that has preferential treatment to the other, separated content providers?

If the aim is to introduce a free market in this field, should not all content providers compete on a level playing field?

12. Summary and questions

This paper raises a number of questions in respect of ownership of content provision which have to be answered before bidding for the 3G licences is launched. If they are not answered, the bidders will not know what they are bidding for!

The first question to answer is 'what are the aims, in respect of access to content, of the regulatory framework for the 3G environment?' Neither consultation paper answers this very clearly. The nearest to such statements are:

- the primary objectives of promoting the development of the telecommunications industry and maximizing consumer benefits (see para.1, above).
- separation of service provision from network operation would allow customers to access the full variety of 3G services. Although this seems to refer mainly to the MVNO proposals, it is a valid aim for content also.
- the open network. If this means what it says, then the network should be 'open'! It should not be 'open when a gatekeeper chooses to open it' nor 'open only if the content provider pays for it' nor 'open if you can find the gate'!

Having decided what he thinks are the aims, the reader should then go on to see how best the further questions, below, will meet the them.

Questions (refer to layer model in para. 4):

1. Should a 3G licence be for network operation only?
2. If it includes content provision services or content-dependent services should this be on the basis of:

- 2.1 exclusive control over layers 2, 3 and 5
- 2.2 exclusive control over layers 2 and 3 but layer 5 are required to conform with other licensees standards
- 2.3 exclusive control over layer 3 or it to be open to other ISPs
- 2.4 exclusive control layers 2 and 3 plus:
 - 2.4.1 no requirement to allow access to other publishers at level 2
 - 2.4.2 a requirement to allow access to other publishers on a commercial basis
 - 2.4.3 a requirement to allow access to the entire internet
 - 2.4.4 a requirement to allow access to the entire internet with equal prominence given, in the users' interface, to all.

- 3. The above questions related to the MVNOs and service providers.
- 4. If it is decided that the licensee shall be able to provide content services, should there be any limit to the use of the network for content other than that which he provides (the MVNO network service provision percentage is not this issue)?
- 5. If so, what is the proportion of such allowable content and how would it be implemented?
- 6. Should the concept of 'Open real-time choice of networks' (para. 9) be implemented? If not, why not?

The reader is invited to supplement this list as the writer would not claim that his paper covers all the issues concerned.

My own conclusion is that only complete separation of the network and content provision will meet the aims which have been stated so far and almost any other aims one can think of - that is an answer 'yes' to question 1. If some of the later question posed above receive a positive response some very careful thought and in-depth discussions are needed to determine what aims they serve that are better than that achieved by separation.

Unfortunately, there seems an unquestioned assumption that a 3G licensee will provide everything including content. This assumption should not be accepted by default due to lack of deep consideration of the aims. It has far reaching implications for the Hong Kong telecommunications and IT industries, the consumers and the preservation of our own identity in the area of content creation – not to mention the essence of the Hong Kong economy which is firmly rooted in a free market which allows anyone, no matter how small, to conduct business.

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20/10/00

“Open Network” Requirement

2.3.5 The “open network” requirement is related to the concept of **separating service provision from network operation** raised in the first consultation paper.

Comment: this clause seems to lay down a principle that the network operator will not be permitted to provide content. However, clause 23.12 (see below) says the opposite.

2.3.6 Submissions supporting the proposals accepted that **separation of service provision from network operation would allow customers to access the full variety of 3G services** and stressed the importance of non-discriminatory access to networks by Mobile Virtual Network Operators (MVNO).

(Comment. What are '3G services'?. One can imagine that there could be some services which are special to the 3G functionality but content provision is not one of those - it already exists for fixed line networks).

2.3.9 The TA notes that most **submissions support the concept of separating service provision from network operation** and agree to the benefits that would be brought to the customers.

2.3.10 As stated in paragraph 2.3.1, the TA intends to introduce **“open network” as an essential element** in the approach for the selection of operators.

2.3.11 In the proposed licensing framework by the TA, the licensees, as network operators, will be required to **open up their 3G networks to 3G service providers**.

Comment: what is the ‘requirement’? Is to be ‘fully open’, ‘open after payment’, ‘open only if you are not competing with me’, ‘open if I like you’ etc? put another way, what editorial authority is the network operator to be permitted?

2.3.11 The concept of separating network operation from service provision will better meet the Government’s policy objective of introducing more competition at the **content and service application level**.

Comment. it is not quite understood what OFTA means by these two terms. The writer has used ‘content services’, ‘content-dependent services’ and ‘information carriage services’. All of them are at ‘application level’ but all different - as explained in the text)

2.3.12 The “open network” requirement **allows the network operators themselves to be service providers** at the same time. As **content**

and service applications are expected to be the major revenue sources in 3G business, the network licensees may retain certain network capacity for their **own use or use by their affiliated companies** for service provision. However, the network licensees will be required to open a minimum amount of **network capacity to non-affiliated service providers**.

Comment: This reference to preferential treatment for the services of a network operator (which seems to include content) is in direct contradiction to what is stated in clauses 2.3.5, 2.3.6 and 2.3.10. Whilst it is understood how a MVNO could be limited on, say the number of terminals he sells, it is impossible to see how an independent content service provider can be limited without destroying the consumers' confidence in it. The consumer determines the extent that a service is used -- not the operator!

2.3.13 The mode of operation of **such service providers could take the form of "MVNO" or simple "resellers"**. A MVNO is expected to own and operate part of the mobile network, e.g. switches, Home Location Registers, etc. and have access to the base stations of the physical network operators. A "reseller" would simply buy airtime or capacity in bulk quantity from the network operators and resell the same to customers under their own brands.

2.3.14 The preliminary view of the TA on the percentage of network capacity to be open to any non-affiliated service providers (whether MVNOs or resellers) lies in the range of 30% to 50%.

Comment: this may be applicable to network services but not to content provision. The clause does not refer to content provision but its context implies that it does.