

## 3API

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## Glossary

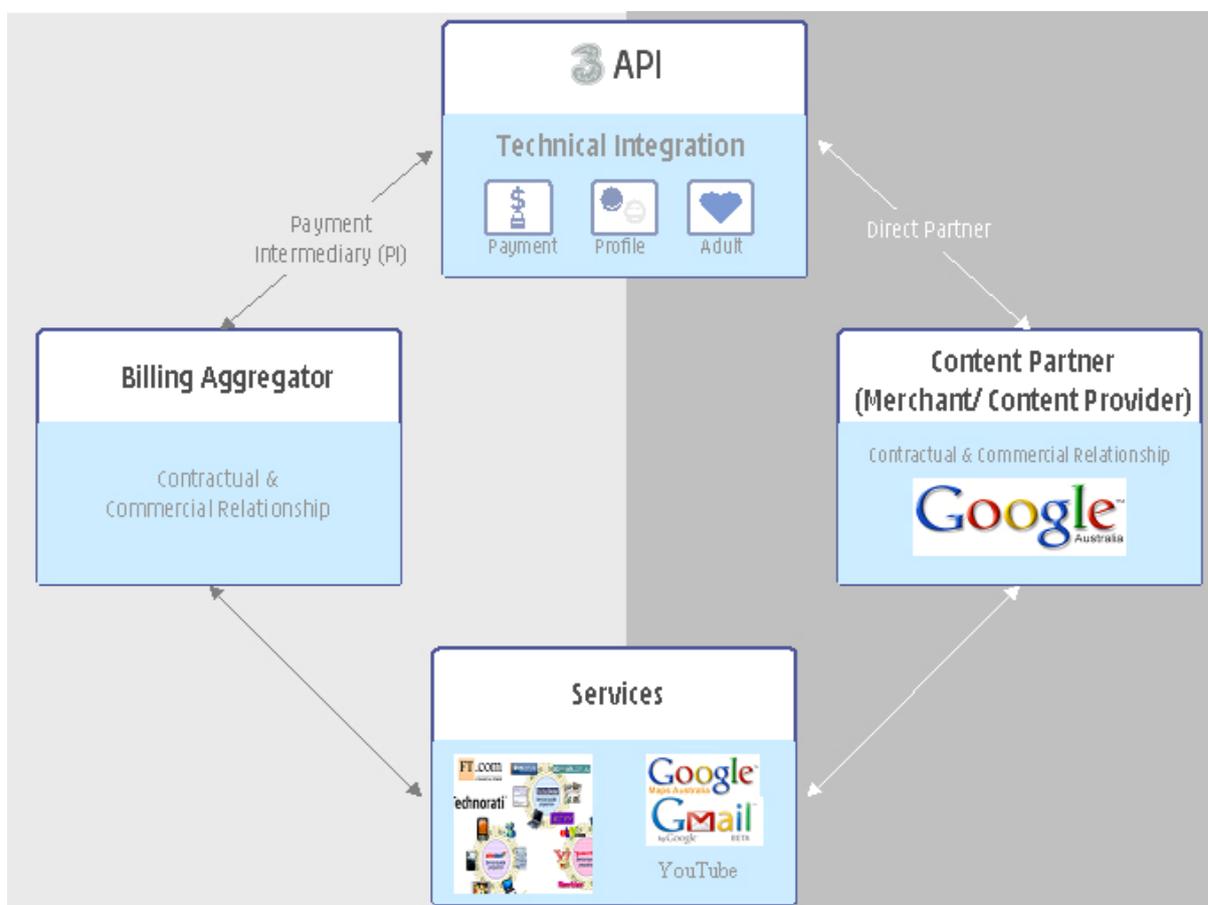
3 – Hutchison 3G Australia Pty Ltd

**3API** - Is an exposure layer for 3. Based on Parlay X (Web Services) interfaces that exposes 3's service capabilities to third parties

**Billing Aggregator (BA)** – A company that has been accredited by 3 and that has direct technical, contractual and commercial relationship with 3 that enables it to connect and run services through 3API. The BA handles any technical and contractual issues and settlement will occur only with the BA. Billing Aggregators tend to specialise in re-selling operator billing services. The Billing Aggregator will manage multiple services for multiple Content Providers or Merchants

**Direct Partner** – Is an accredited company that has direct technical, contractual and commercial relationship with 3 that enables it to connect and run services through 3API

Figure 1



**Merchant (Content Provider, Merchant)** – Is a company that has a mobile site that sells mobile content using 3API. The Merchant has a relationship with the Billing Aggregator but NO direct relationship with 3

**Partner Site Programme** - The Partner Site Programme enables third party content providers, brands and publishers the opportunity to link and promote their mobile site or application onto the 3 portal. The programme uses a variety of tools and processes to deliver this

**Bonus Sites** – Are sites that are built, hosted and managed by third parties but integrated onto the 3 portal. These sites may charge customers for products and services but the data is zero-rated to the customer

**Hosting Aggregator** – Is a company that has a technical, contractual and commercial relationship with 3 to enable the delivery of zero-rated sites onto the 3 portal

**AAA** – Stands for Access All Areas or 'AAA' functionality. The AAA database is a proof of age – over 18 database that 3 has collected in order to allow its customers to safely access MA and R rated content

**Wap Billing** - Is the ability for customers to browse a mobile site and then click to purchase content or services from that site. This purchase will then get added to their mobile phone bill or deducted from their prepaid credit

**Charging Terminology:**

**Atomic Charge** – Is a on-off payment which will commit directly to 3API without any reservation process.

**Two Phase Commit** – Is a charging mobile which will only charge for an item / service through a 2-way charge i.e. a request for a reservation of funds must be sent through prior to fulfilment then a commit must be sent to release the funds

**Reserve** – Is a request sent through to 3API to reserve a chargeable amount prior to purchase

**Commit** – Is a request sent through to 3API to release the reserved chargeable amount

**Release** – Is when 3 releases the reserved chargeable amount post a commitment being sent through

**Subscription** - A subscription is an agreement by a customer with a merchant to allow their mobile phone account to be charged on a regular basis for goods and services

## Document Purpose

This document is aimed at organisations that are in the process of developing mobile services and wish to connect to 3's network for the following services:

- Billing - the ability to bill for products and services through the mobile
- Adult PIN verification – the ability to find out if customers on the 3 Network have signed up to the Access All Areas Pass i.e. proved that they are over 18 years of age.
- Advertising profile information (not yet available)

The purpose of this document is to provide partners with an overview of the 3API platform as well.

This document serves as a guideline for 3G mobile content partners or parties interested in becoming payment service providers when providing a charging infrastructure through 3API to 3 customers. (See *Figure 2 for a high-level architectural overview of 3API*). These guidelines are expected to form a part of any contractual agreement between Hutchison and any party wishing to undertake the role of a Billing Aggregator (BA) or Hosting Aggregator (HA). The purpose is to ensure that the payment experience for consumers is consistent, transparent and user-friendly to our customers.

## Background

3 recognises that the Mobile Internet is expanding rapidly and that an increasing amount of made for mobile sites and applications are being produced. 3 wishes to give its customers the best possible Mobile Internet and content experience and in November 2007 3 launched the "Partner Development Programme". The Partner Development Programme enables third party content providers, brands and publishers the opportunity to link and promote their mobile site or application onto the 3 portal. 3 is extending this Open Internet Programme through 3 API which will expose network service capabilities to third parties to enable them to quickly and easily set up mobile services in an Internet type environment.

### What is 3API?

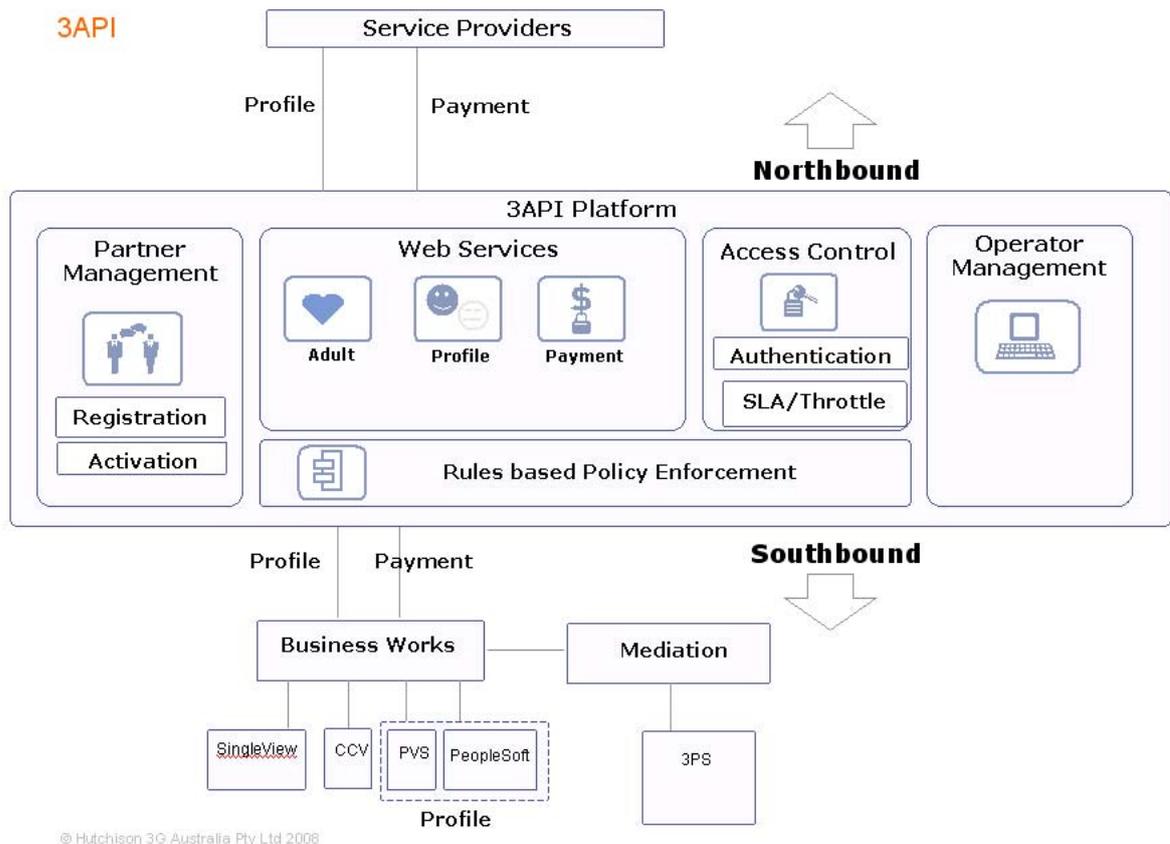
3 API is a global standards interface that exposes 3's service capabilities to third parties. The services that will be available through the interface at launch include:

- Event based billing
- Adult Pin Verification
- Basic Customer Profile Information

This information will be exposed through a web services interface that will allow companies to quickly and easily integrate into the 3 platform. Through exposing these service capabilities 3 aims to encourage application development and capitalise on the web 2.0 trend.

The first services to be exposed through 3API are the event based charging module, which will be delivered to customers through what is commonly termed as 'Wap Billing' and the Adult PIN verification

Figure 2



### What is Wap Billing?

Wap billing is the ability for customers to browse a mobile site and then click to purchase content or services from that site. This purchase will then get added to their mobile phone bill or deducted from their prepaid credit. Wap billing enables a real-time interface into the 3 billing system exposed through an external API.

There are many benefits of wap billing including:

- Ease of use – through consistent pages, clearly marked information and speed of navigation
- Trust in the mobile medium as a billing mechanism – price, content provider name and T&C's will be clearly visible on the billing pages
- More enjoyable Mobile Internet experience – seamless payment process leading to increased sales and an increased return rate

### How do you connect?

In order to connect to our charging API you must first become a Billing Aggregator or a Hosting aggregator (BA or HA). These Billing Aggregators or Direct Partners and will have a contractual relationship and commercial relationship with H3GAU and will be responsible for technically integrating and managing the billing calls to 3. The billing pages and customer experience will be developed to a set of rules and guidelines that has been created by 3 in order to ensure a superior and consistent customer experience.

Other merchants will have to use one of these BA in order to deliver charged mobile services to the 3-customer base.

For more information on becoming a BA and to access and to access our Code of Conduct on Wap Billing please refer to our Developers Website which can be found at:

<http://tinyurl.com/527rrk>

<http://tinyurl.com/54m2ov>

### **Adult PIN Verification**

Along with the billing functionality 3 will also be releasing the ability to check the Adult PIN status using 3's Access All Areas or 'AAA' functionality. The AAA database is a proof of age – over 18 database that 3 has collected in order to allow its customers to safely access MA and R rated content. The ability to query this database is available through 3API. Again only Billing Aggregators or Direct Partners can access this information. There are also rules surrounding the use of this service, which are outlined in the Code of Conduct that can also be found on the Website. Please refer to our AAA wireframes for detail guideline on AAA UI. (Access All Areas v.6.0.3)

## Customer Purchase Flow Guideline

This section of the document details the general rules that the BA must adhere while operating a purchase service to 3 customers.

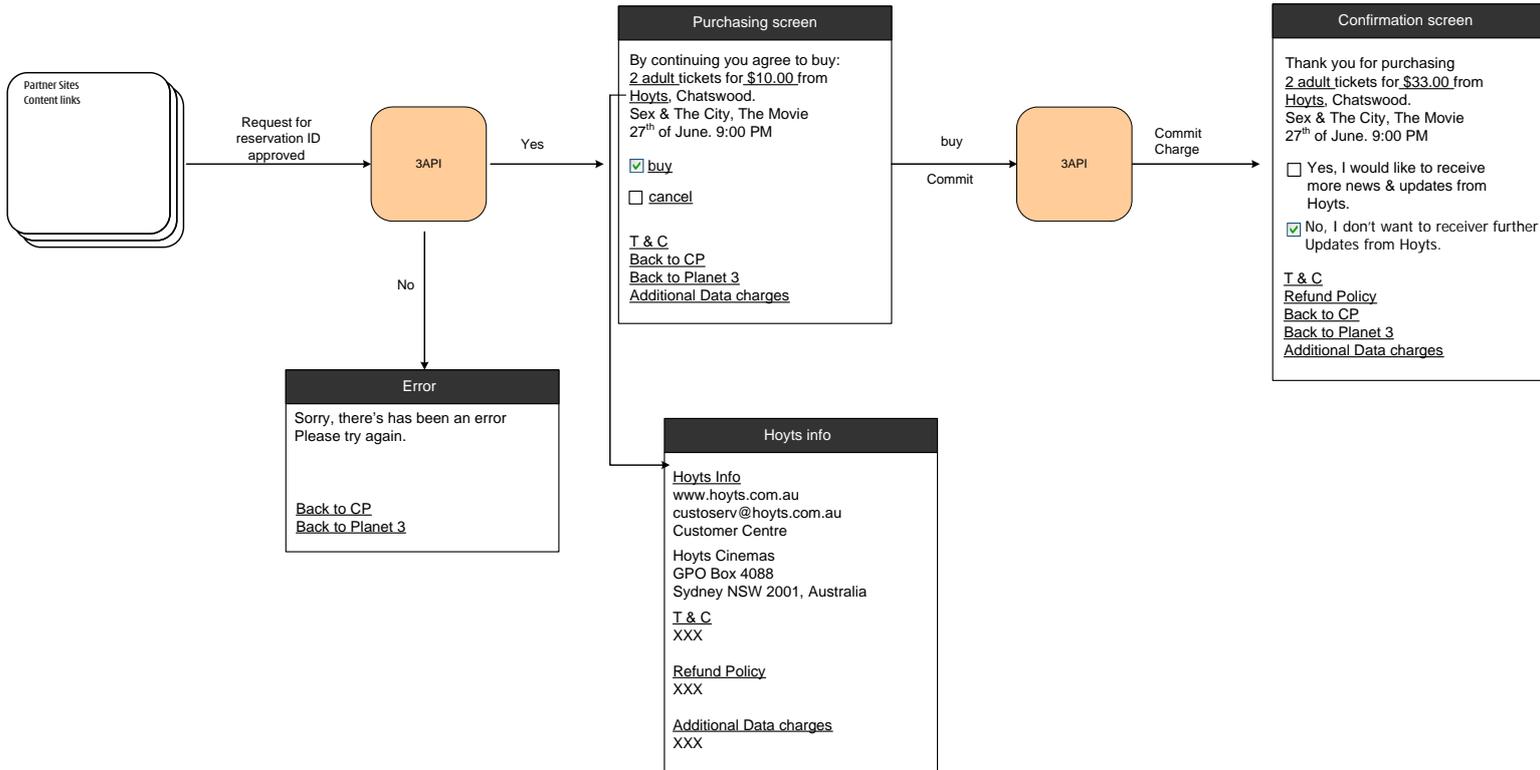
### 1. Two Phase Commit Charge

The Two Phase Commit is a charging model which will charge only once for the item/service through two phase charging. The BA is required to request a reservation of fund before the item/service is fulfilled and then committed (release) to the 3API.

- 1 The BA should present all screens involving before, during, & after purchasing process.
- 1.1 Customer should select item from merchant site directly.
- 1.2 BA will request a reservation ID from Hutchison
- 1.3 If Hutchison fails to provide a reservation ID, merchant should present an error screen.
- 1.4 If, prior to the commit, the user cancels the purchase, merchant must request that the BA cancels the reservation request & releases the reservation.
- 1.5 If purchase action is completed within 7 minutes, commit the charge.
- 1.6 If purchase action is not completed within 7 minutes, release the charge.
- 1.7 Merchant should provide a confirmation screen when any request for transaction by user is completed.
- 1.8 should provide error screen when transaction is cancelled due to system error.
- 1.9 If Hutchison fails to release reservation merchant does not need to indicate the error to the user unless there is an impact on user experience flow.
- 1.10 BA will commit only to an existing reservation ID for the amount that was reserved.
- 1.11 It is recommended to permit a retry-purchasing request within merchant session time out.
- 1.12 User cannot cancel once purchasing commit is done.
- 1.13 Once the commit has been done merchant should present a successful notification screen including any detail user need to fill or a link to continue using the service.
- 1.7 Cancellation can occur between reservation & commit purchase, in which BA needs to release the reserved fund in this case.
- 1.8 We recommend using the Two Phase Commit Charging for Downloads.

Figure 3

Purchasing a movie ticket (screens are only indicative)



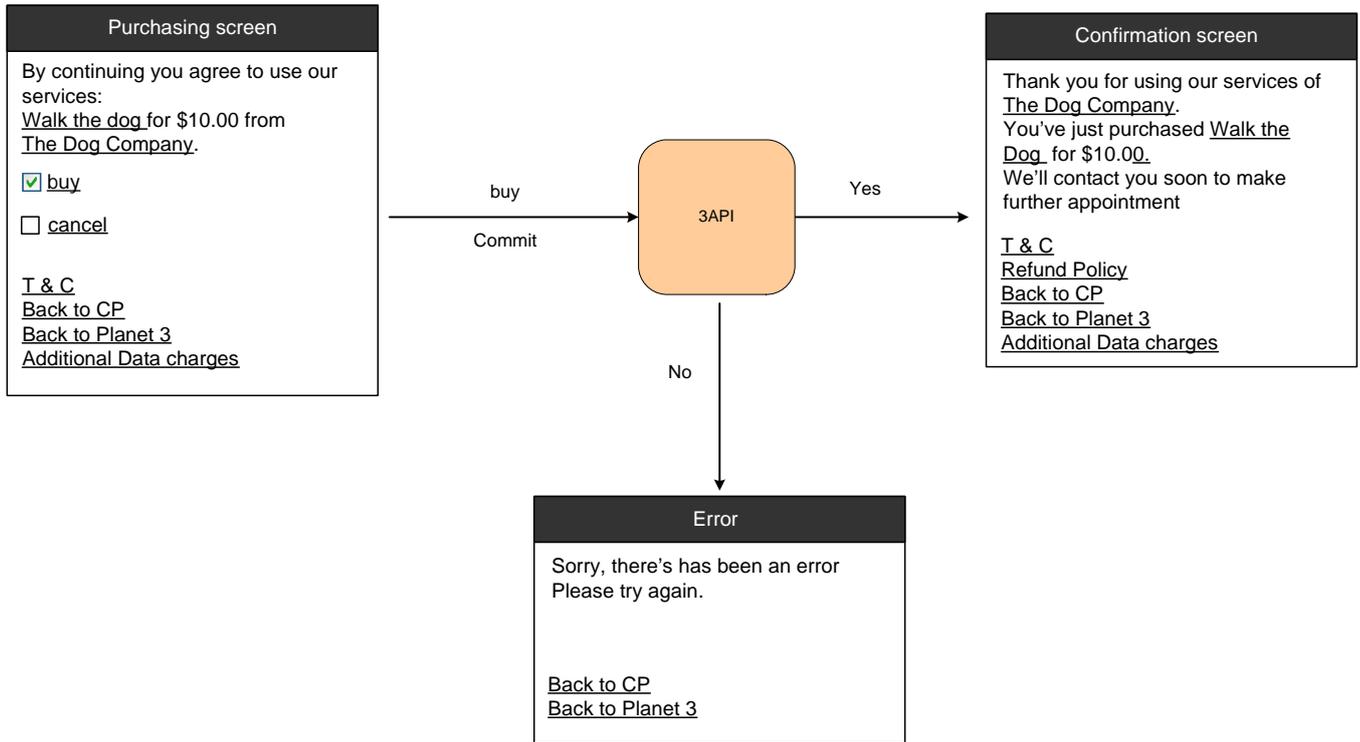
## 2. Atomic Charge

Atomic charge is a one-off payment, which will commit directly to 3API without any reservation process. This applies when BA purchasing is designed only for atomic payment. Merchant cannot have both Two Phase Commit Charge & Atomic Charge in one purchasing flow.

- 2 BA will commit to Hutchison without any reservation process.
- 2.1 If Hutchison fails to commit charging to BA, merchant will present an error screen.
- 2.2 Merchant should present a confirmation screen when purchasing (commit) is successful.
- 2.3 Merchant should provide a clear understanding of the point of charge would occur.  
E.g. click here for \$3.

Figure 4

Purchase a one-off service. (screens are only indicative)



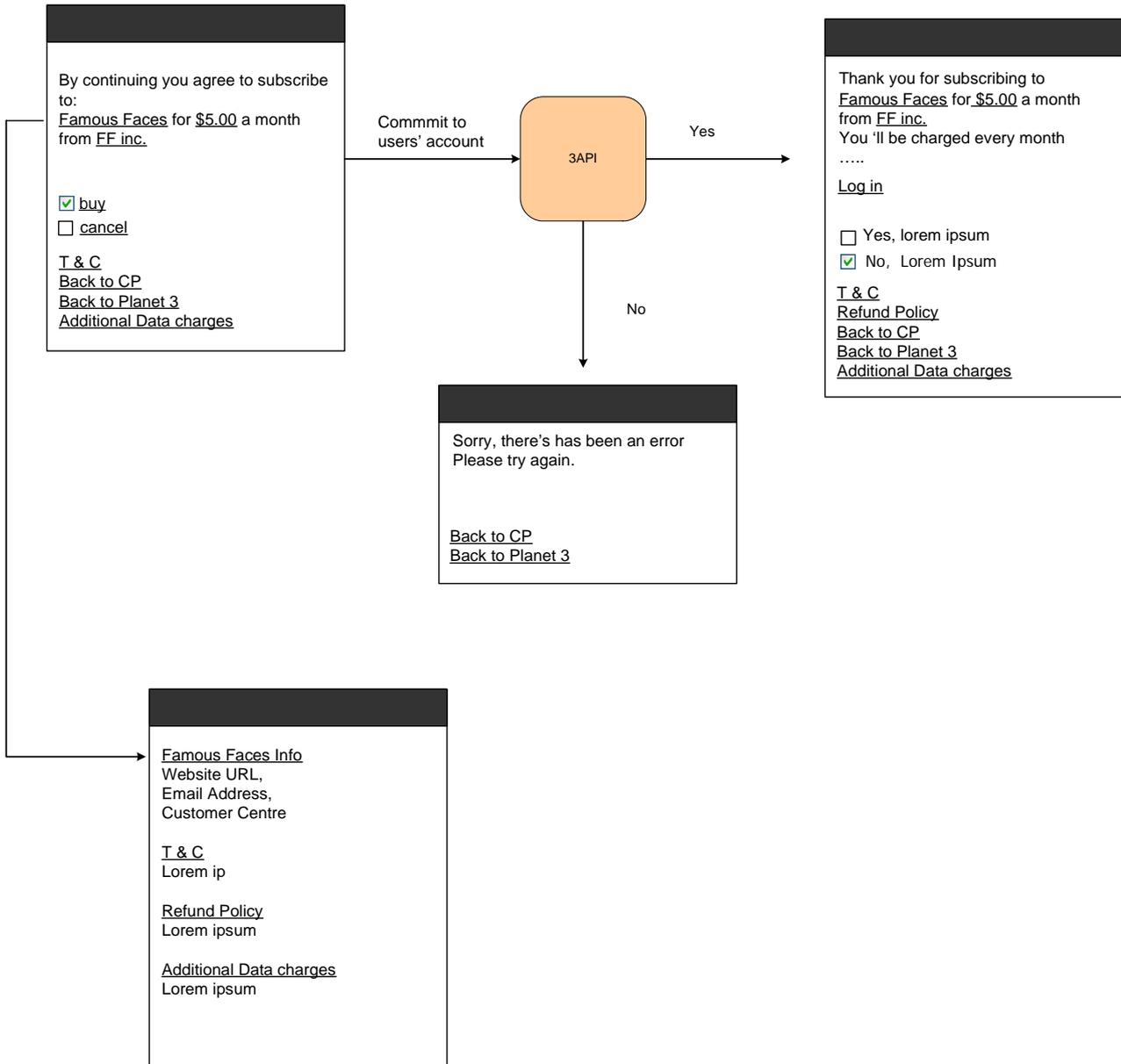
### 3. Non Connected Charges or Subscription

A Non Connected Charges or Subscription is an agreement by a consumer to allow their mobile phone account to be charged for more than one good/service to be paid for and applied in the future periodically. The agreement will include terms limiting the subscription either by time, monetary value or quantity of goods.

- 3 The merchant should present all screens involving before, during, & after subscribing. Only valid & active subscription charge events request are communicated to Hutchison for processing.
- 3.1 Consumers should initiate subscription through handset only & to merchant site directly.
- 3.2 Service should activate once the purchase is successfully done.
- 3.3 *Cancelling subscription can be done after a release via a variety of process which are outlined in the Internet Event Billing (IEB) Code of conduct*

Figure 5

Subscribing to Famous Faces. (screens are only indicative)



## User Experience Guidelines

In order to provide a common and a consistent user experience throughout the general mobile environment to our customers, the merchant & BA must follow Hutchison's general User Experience rules

### 4. General Charging User Experience Guideline

4 The price of the item or service must be clear, prominently displayed and not misleading in any way. Merchant must give the full price of the item (G.S.T. included) or service at the initiation of purchasing. It is also advisable that pricing confirmation is shown at the end of purchasing. Pricing must be clear visually and easy to understand.

4.1 Description of item or service being purchased must be clear to allow users to associate the payment with what is being paid for.

4.2 Pricing must be presented in AUD & with \$ symbol.

4.3 Before point of purchase the Terms & Conditions must be accessible to user as a hyperlink. The T&C page includes H3GA Terms and Conditions; BA Terms & conditions and merchant Terms & conditions if applicable. Also should provide information on the method of payment.

4.3.1. Additional data charge information must be provided if applicable.

4.3.2. Identity of supplier of item or services (merchant shop, site name) must be clear, can be presented as a hyperlink to further information containing;

- The trading name of the organization.
- The registered address of the trading company
- Official Website
- Customer Care/Service info telephone or email address easy to understand & use.

4.3.3. Refund policy must be available and easy to understand.

4.3.4 Unsubscribe policy must be available and easy to understand and must fulfil the requirements of the 3API Billing Code of Conduct Code of Conduct.

4.4 User should be able to go back to merchant page after a successful purchasing process.

4.5 Once the user has confirmed their payment, they must be presented with information that clearly communicates;

- The purchased amount & the identity of the merchant
- Whether the payment was successful or failed,
- Customer care & link to help line.

4.6. If purchase is successful, the successful payment screen must be hosted by the merchant.

4.7 Merchant may provide marketing OPT-IN, OPT-OUT anywhere in their services. Users must be set by default OPT-OUT for marketing purposes. MERCHANT can provide marketing OPT-IN/OPT-OUT only once per service as part of any purchase flow.

**In addition to standard charging user experience guidelines, other user experience recommendations are as follows:**

4.8 If the content page is too long provide a Top of page link.

4.9 Merchant should follow standard guidelines of W3C Mobile Web Best Practices 1.0

4.10 Merchant should have a clear purpose or function that is readily understood.

4.11 Structure, design, navigation and interaction elements must all support the purpose and function of the merchant in an intuitively useable and consistent way. There must not be elements that are confusing, misleading or unclear. All communication (e.g. notifications, error messages etc.) must support the overall product experience.

4.12 There may not be any obvious faults such as wrong links, images, dead ends (where there shouldn't be one), etc.

4.13 All copy should be easy to understand, should not be confusing and should be as enticing to the customer as possible.

4.14 Assist user experience navigation logically.

For further guidelines on User Experience Style refer to the appendix as follows:

## Appendix A – User Experience Guidelines

### Device Support

There are many different device screen sizes amongst the devices offered by 3. Each device is categorised into a class defined by the maximum usable screen width. When designing header/logo images to be displayed as merchant banners on the purchase flows, each of these sizes needs to be considered and catered for. Shown to the right are the 6 device classes (also commonly referred to as DA classes) and their associated maximum usable screen width in the browser. Specific to Event-Based Billing, DA1, DA2, DA6, and DA7 are the minimum device classes that must be supported.

Device Class	Maximum width
<a href="#">DA7</a>	<a href="#">346 pixels</a>
<a href="#">DA6</a>	<a href="#">231 pixels</a>
<a href="#">DA1</a>	<a href="#">194 pixels</a>
<a href="#">DA2</a>	<a href="#">164 pixels</a>
<a href="#">DA3</a>	<a href="#">130 pixels</a>
<a href="#">DA4</a>	<a href="#">123 pixels</a>

Seen below are some examples of phones offered to 3's customers and the corresponding device class.



DA1 - Moto A1000



DA2 – LG U880



DA6 – SE K800i



DA7 – Nokia N90

As a minimum, merchants are expected to produce artwork for DA1, DA2, DA6, and DA7 device classes if Merchants wish to display their banner at the top of each purchase flow page. These images must be supplied to the Aggregator, which is responsible for managing the display of these images.

## Graphics



### Illustration

When considering the type of banner/logo to supply for display at each of the different device class resolutions, try to select styles that will work well at small sizes, have a punchy, graphic feel.

Illustrations should meet the following criteria:

- bold, clean colours
- simple graphic styles
- work well on white flat colour backgrounds
- easy to understand (not too abstract)
- iconic

*Suggestion:*

Avoid pastels, collages, abstract images and overly intricate techniques



### Photography

When using photography within the banner image, the photography guidelines are much the same as those for illustration. Again, simplicity and clarity of subject matter is key, as is a strong colour presence. Show details, different angles. Instead of a wide shot of a cricket field, let's have a shot of the wicket exploding.

Cropping images correctly will improve legibility and impact. Get in tight and keep it simple. Try to go for a detail, or a sign, rather than attempting to show the whole dining room. You should crop an image in order to remove the surrounding, unwanted image areas. This allows you to:

- focus on an area of interest, removing extraneous parts of the image
- improve the impact of the image
- reduce the size of the image

*Suggestion:*

Avoid messy, overcrowded compositions

Avoid wide exterior and interior shots



### Content in Images

The principle of an image is to be visually appealing and add value to the content. The image should add context, entice the user to read, click, reply and even forward. Copy should be clear and concise.



### Bit Depth

Generally the displays on handset will be less than computer displays – typically between 12-bit and 18-bit. This corresponds to between 4096 colours and 262144 colours. The handset display will automatically map the colours in a 24-bit image to the available colours of that display. This is generally not very noticeable with the possible exception of 12-bit displays where the reduction of colours (to only 4096) is so dramatic that the colours within the image may not resemble its original colours. Be aware that subtle shading in 24-bit images may be impacted by the colour reduction (eg gradients in blue skies, and softly-lit skin-tones) of 12-bit screens.

### Image Optimisation

When optimising images for banner display, there are 2 preferred optimisation formats:

- .jpg  
*Jpegs are used for photographic images or images with large amounts of gradients or variations in colours.*

*Jpegs should never be set to Interlace as interlaced jpegs do not work on some devices.*

- *.gif*  
*Gifs are used for flat colour graphic images and images that do not have a lot of gradients, such as icons, buttons and comic style illustrations.*

*Gifs should never be set to Progressive as progressive gifs do not work on some devices.*



Note that **24-bit png's** are not advised as they can increase an image's file size quite substantially

## UI Language

### Key principles:

- Ensure that content is suitable for use in a mobile context
- Use clear and simple language
- Limit content to what the user has requested
- Users in a mobile context are often looking for specific pieces of information, rather than browsing. Content providers should consider the likely context of use of information, and while providing the option to access all information, should offer appropriate information first.
- The general prescription to use clear language is of particular importance in the mobile context where brevity and directness are generally more desirable than a discursive style. Writing content in the traditional journalistic "front loaded" style can assist users determining whether information is of interest to them and allow them to skip it more easily if it is not. Placing distinguishing information at the beginning of headings, paragraphs, lists, etc. can also help the user contextualize when using devices with limited screen area.
- In many cases the user pays for bandwidth in the mobile context, and offering the user content that is extraneous to their needs, especially advertising, costs them time and money and contributes to an unsatisfactory experience. In general, the user's consent should be sought before initiating the download of content.
- This is especially important for Error Messages, where it is important to quickly reassure the customer that they are being supported. Every effort should be made to describe the nature of the error, current state, and options to assist them recover. Users should never be left in a dead-end, without appropriate links to help them navigate to a 'safe' page.

### Error Messages

Key principle:

- Provide informative error messages, and a means of navigating away from an error message back to useful information
- It is inevitable that, on occasions, a mobile user will not be successful in accessing the content or information they sought. Providing easy navigation away from the error is particularly important in the mobile arena, where browsers may not have an easy-to-find "back" button, where contextualization is frequently difficult and where re-entry of URIs as a means of error recovery is particularly onerous.
- It is noted that errors due to networking, connection and some kinds of mistyping of URIs are not within the control of the content provider which has no way to influence how such errors are presented to the user. However, where errors are within the control of the content provider the user should be provided with clear information regarding the fault they have experienced. This should help them to understand whether the fault was temporary or permanent, whether they should retry the attempt to access the content, and how they may be able to escalate the problem.
- It should also be possible for the user to escape from the error condition. They should either be able to return to the page they were on prior to the error, or to be able to move onwards to a convenient part of the service from where they can retry or alter the transaction they were attempting.
- It is noted that many web servers provide a default error page especially in the event of a request for a non-existent page (404) or an internal error (500). Where possible, applications should trap all error conditions by overriding the default pages if necessary, and handle them in a user-friendly, and graceful way. H3GA will endeavour to return billing errors at an appropriate level of granularity to facilitate effective error message design.
- Error messages should be clear and concise, adhering to the same best practices as the rest of the site/product. They should be provided in a format that the device could handle. Given the relative

novelty of mobile interaction, it should be expected that mobile users are more 'fragile' than online users; hence, fewer assumptions should be made about skill level and ability to interpret error conditions.

-The error message should detail whether the issue is likely to be temporary or permanent, whether the user may be able to solve the issue themselves (for example, by changing input data, or a handset setting), or whether it is an issue that can be escalated to the content provider or network operator. In the latter case, contact details, such as an SMS address or a support line number, might be appropriate.

-The error message should provide one or more of the following navigational constructs:

-A "back" link to return to the previous page (particularly for devices that do not have an easy to find back button);

-A "retry" link to attempt the relevant part of the transaction again (note that this may not be equivalent to a page "refresh");

-A "home" link to allow the user to return to the main part of the application.

-The error message can provide an error code to be used for diagnosis of the issue. However, the use of an error code is not a substitute for a human-readable message. While some users may understand "404" to mean "page cannot be found", this must not be assumed to be true for all users.

-General Recommendations

### **Text labels**

Text labels must be concise and self-explanatory to optimise both the limited screen real estate as well as a user's short attention span.

### **Confirmation**

It is important that when a user has triggered an action they know it's actually happening.

*Suggestions:*

It maybe as simple as when you select a navigation item having the navigation name as the heading for the following page.

### **Legibility**

Make sure that colour contrasts, text sizes, highlighting and the overall layout all contribute to making the pages clean, clear and highly legible, even in bright sunlight or when users are distracted.

### **Headings**

Permanent headings at the top of every page is a good way to give the user immediate recognition of where they are within the site. This is especially important for errors, where the heading should describe the user's current state. This heading can be a graphic but need only be very slim and consist of the product name and/or brand. Note that not all device browsers display the page title as part of the browser furniture.

### **Keep it simple**

Stay clear of overly complicated images and typefaces as they become unreadable at smaller device classes. Where the text needs to be small sans serif and aliased typefaces are recommended.

### **Using 'Bold' or 'Strong' for text in your code**

'Bold' or 'strong' tags are often not supported by mobile browsers and should be avoided.

Suggestions of other ways of creating hierarchy in page content:

- Different coloured text
- Graphic headings
- Different coloured backgrounds between list items
- Keylines to separate content
- Bullet point list items
- Paragraph spacing

### '3' Logo Usage

The use of the '3' Logo is strictly controlled and use must adhere to existing guidelines. Merchants and Aggregators are not permitted to use the '3' logo as part of, or in reference to, event-based billing page flows without prior arrangement with H3GA.

### Related Documents

<b>Title</b>	<b>Version</b>	<b>Date created</b>
3API Service Overview	X	XX/XX/2008
3API Billing Code of Conduct	X	XX/XX/2008
Access All Areas	6.0.3	XX/XX/2008



