

# Inter-Media Publishing System (IMPSYS) for Classified Advertising Service Providers

WanYuee Low

**Abstract—** With the recent development of digital media, Classified Advertising Service Providers often face problems in managing advertisement requirements in terms of advertising requirements and production expertise. As an advertiser, placing an advertisement requires a lot of effort in understanding “what are you paying for” since there are discretely different advertising schedules and designs to contend with across different medias. Classified Advertising Magazines generally features very little content and more advertisements, therefore the subscription rate of these type of magazines are low. The Inter-Media Publishing System aims to simplify the classified advertising process by providing the publisher an online tool to collect and manage advertisements, which will then be placed into an easy readable magazine format. Advertisers can benefit from being able to manage their advertisements and communications right from the desktop & mobile app. Magazine subscribers can preview and access the library of online magazines and browse suggested content using the application, while potential customers can benefit from a streamlined process of trading with real time communications and bookmarking facilities on the same application. The end product is a new online service provides a cost effective way for advertisers access to a bigger marketplace through content marketing.

**Index Terms –** Advertising, Classified Advertising, Publishing, Electronic Publishing, Publishing Systems, Advertisement Management, Indesign, Adobe, Microsoft, Microsoft Azure, eBooks, ePub 3.0

## I. INTRODUCTION

Classified Advertising is a form of advertising where buyers and sellers connect for the purpose of trading. It was first featured as part of printed newspapers and is a much preferred option by individual sellers to advertise their products and services. Soon the concept was also widely accepted as an alternative advertising option for companies as the idea of potential customers browsing through available options through catalogues is a great way to sell.

In the Malaysian market today, there are over 5 Classified Advertising Service Providers that provide this service to advertisers, the largest of these specializes in vehicles,

properties & jobs. The oldest of these Classified Advertising Service Providers started with a Print Magazine [1][2], and as the Internet became more popular, they have made the content more accessible through online websites, and at the same time providing functional features that benefits the buyer and the seller. The newer Classified Advertising Service Providers started off with the Internet Business Model [3][4] and revolutionized “buying and selling online” with useful features such as advertisement search, online advertisement posting and sharing via social networks.

With the advent of tablet computing integrated with the lifestyle of many consumers in recent years, the demand in the area of Electronic Publishing, specifically eBooks will be unavoidable. Classified Advertising Service Providers should consider eBooks as another value added platform for advertising due to the popularity of “bring it anywhere” nature of magazines.

This project will first recommend a publishing system that fulfills the needs of a Classified Advertising Service Provider that produces a weekly print magazine, and also maintains an internet website. Next, the system will be enhanced to enable the Classified Advertising Service Provider to publish the print magazine in eBook form.

## II. DOMAIN RESEARCH

This section is intended for the reader to understand what Classified Advertising is about and its particularities based on existing available literature. Part of the domain research includes Classified Advertising Service Providers in Malaysia, and similar Software Systems that are used in the industry today.

### A. The Advertising Concept - Purpose, History, Evolution

The goal of Advertising is to present a controlled message to a large number of people at a low cost and in the same time quickly [5]. According to Dorfman, the very first signs of Advertising activities originated five thousand years ago in the form of public announcements carved on stone, and much later made its evolution to touring and print versions during the Industrial Revolution around seventeenth to eighteenth century in the United States & United Kingdom. Newspapers was only one of the many methods of advertising available during that time, which was considered the most insignificant compared to the other options such as horse-drawn wooden towers covered with posters and sandwich-men who carried boards in front and

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behind them on which advertisements are shown [5].



Fig. 1. Advertising Methods in the seventeenth century in United Kingdom

The business of advertising involves the advertiser, advertising media and advertising agencies. An advertiser can be an Individual, Small Trader or an established Corporate Entity. A few examples of advertising media are Newspapers, Magazines, Television, Internet or the increasingly popular Mobile Platform. Advertising Agencies are companies who specialize in helping advertisers to manage advertising activities in multiple advertising media. The end product that appears in the advertising media is referred to as the Advertisement.

There are several elements to an Advertisement, but the fundamental rule is the message that is being delivered must be clear, at the lowest possible cost and viewable by many at the same time quickly [5]. An experiment was conducted to determine the correlation between the Advertisement's size and content towards response, and their findings indicate that mechanical variables such as color, size, and photospace to affect readership or recognition scores [6]. Advertisements are used as a marketing vehicle to attract the attention of potential buyers through persuasion or to convince existing buyers to buy more.

Classified Advertising is a form of advertising where buyers and sellers connect for the purpose of trading or fulfilling a need. As quoted by Maslow, "It isn't normal to know what we want. It is a rare and difficult psychological achievement." [7] This is where Classified Advertising excels at connecting these two groups of people, and first originated as a separate section in printed newspapers in the United States. In 1977, Sir John Madejski OBE DL brought back the idea of a classified magazine after a trip to the United States, known as Thames Valley Trader [8]. As the internet era bloomed, classified advertising was also offered on the web with the creation of Craigslist in 1999 [9].

### B. Features of a Magazine

The word 'Magazine' originates from the Arabic word 'makhazin' that carries the meaning "storehouses". Generally magazines contain information in the form of editorials (written articles) and advertisements. They are published at regular intervals (periodicals). The print appearance is high impact and visual driven, which makes it an entertaining medium for the consumers. An important feature of the magazine is the frequency of advertisements is much greater compared to newspapers [10].

In the Internet age, magazines have moved away from being distributed exclusively through newsstands and bookstores or

direct mail order, to virtual online bookstores accessible from any computer. Despite this change in distribution, the cost of printing is still being subsidized by advertising, a purchase price, pre-paid subscriptions or sometimes all three options. [11] The term "Print Magazine" and "Digital Magazine" refers to which media the magazine is produced in.

### C. Productions Department as the control center of content

Productions Department is involved in producing the Classified Magazine by collating data from internal (departments) and external parties (advertisers). The magazine schedule outlines separate deadlines for each stage of work to ensure that the magazine is published on time. The type of content a Production Department manages can be Editorials, Advertisements and Internal Promotional Pages. The result of the process is magazine issue raw files (produced from a Desktop Publishing Software), which is the main deliverable required for printing and distributions.

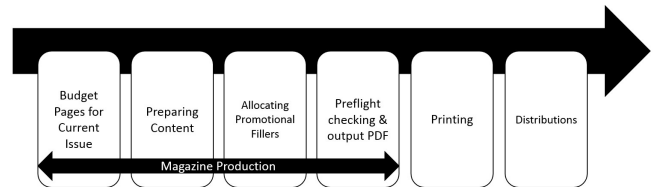


Fig. 2. Magazine Production Activities

From the above diagram, it is clear that Magazine Production ends at the point of Printing, which usually involves specialized hardware (press equipment and binding). For traditional media, it is usually outsourced to third party and printing service providers to reduce cost of operations. For digital media, the facility is available as part of the latest versions of the design software that was used for magazine productions. This is also known as "Digital Publishing".

Spurgeon states that as consumers of traditional media is increasingly likely to turn to the Internet for classifieds it will add to the challenges that traditional media face. [12] The Productions Department faces key challenges of content management on both platforms: streamlining the publication processes that makes up a Classified Magazine, since content are shared between both print and web platforms and addressing the need to improve accountability of content which complements sales force activities along with accounting requirements.

Digital Publishing adds a new dimension to publishing content on tablets and smartphones by enabling production staff to produce the magazine in different formats (eBooks). Major design software companies such as Adobe and QuarkXpress has been in the forefront of the new development in mobile content strategies by introducing the Digital Publishing System capabilities and HTML5 App Readers respectively in their existing suite of design tools.

To effectively address inter-departmental communication needs, enterprise level publishing systems are used to complement magazine planning facilities (Flat Plans) but also

has advertisement inventory management, accounting features and reporting apart from integration with design tools & provide versioning control.

#### *D. eBook Formats and Layout Considerations*

The distinguishing feature of eBooks is “the size of the page - all must adjust to the device's screen size, which is currently about the same as that of the page of a standard hardcover book”. [13]

For eBook publishing, it is similar with Online Publishing with the exception of web specific capabilities [14]. Documents should be in a certain structured format prior to being processed into eBook format [15]. There are several available methods of publishing content on portable devices, but due to the lack of standard specifications of these devices, the cost of distribution is significantly higher [16]. The other issue that publishers have adapt to the new way of marketing their publications online through incorporating high quality metadata [17] in order for it to be searchable by potential readers.

ePUB 3.0 is a standard approved by IDPF in 2011, which is an advancement from the ePUB 2.0 standard released in 2007 [18]. It is a popular format which supports full-page zoom, single-page view, embedded media (images and fonts), scripting, animations and interactivity, and narration overlays [19]. Layout can be fixed or reflowable, and most eBooks created today are reflowable as it allows the user to change the font and font size and adjust other settings through the eBook Reader App [20], apart from having annotation and highlighting functionality [21]. There are other eBook formats created by major retailers such as Kindle's KF8, Apple's iBooks, Barnes & Noble (B&N)'s Nook and Kobo that has similar capabilities as ePUB 3.0 however implementation is specifically for their devices.

#### *E. Classified Advertising Service Providers in Malaysia*

Esposito J. has introduced the concept of identifying areas of progression in 5 stages for Publishers from Print to eBooks [17]. He also emphasizes that Publishers place emphasis on a customer's return sales as opposed to a Librarian's need to preserve works. Based on initial investigation, the publishers of the “Motor Trader” & “On The Road” magazine has been classified as being in Stage 2 where both of them publish content in print & online, but has not ventured into the realm of eBooks.

At time of writing, a sampling of Classified Advertising Service Providers available in Malaysia are “The Star”, “The Malay Mail”, “Motor Trader Magazine”, “On The Road Magazine”, “Mudah.my” and “Carlist.my”. The list is ordered chronologically according to the time they appeared in the market. Newer service providers do not produce content in the print media. One of the reasons is that printing is a very costly operation compared to uploading content on the website, both in terms of material (ink, paper), transportation and planning effort. Another point to note is that Mobile enabled Websites is used as Web Media, mainly because it is not accessible “offline” on the Tablet or Smartphone device.

#### *F. Similar Systems*

At time of writing, there are a number of tools available to facilitate magazine page planning. There are two general groups of applications: Cloud Based Page Planning systems, and End-to-End Publication Systems. This section will examine one tool from each group, followed by a summary of features of the Inter-Media Publishing System that will improve upon the existing systems.

Blinkplan is a cloud based page planning applications are designed to handle only page planning operations for each magazine issue. It also allows sharing of the plan between other members in a team [22]. Usually the Page Planner is a member of the Productions Department, followed by team members in Editorial & Sales Departments. Sharing of the page planner is necessary to update the progress of the content development, and to reserve or book (premium) advertising spaces. Keeping a constant update on the page planner can also improve editorial quality as there is some predictability in the allocated pages, and overall magazine quality as the promotional advertisements can be spread out evenly creating a more pleasant reading experience.

The FutureProof Advertising System (FP) is an example of an End-to-End Publication System developed by Miles33 in the United Kingdom [23]. It provides a much more extensive feature set whereby Advertisement Booking is automated, i.e. in cases where the Advertisements are booked for a series of consecutive magazine issues. Credit Control features are also integrated into the system, which enables scrutiny and audit over the advertisements, and invoice advertisers when required. Data collected from magazine planning activities are presented in reports for management review to better plan advertising sales strategies and promotions. One thing to note is that End-to-End Publication Systems are not designed as a replacement tool for Desktop Publishing, instead as a complimentary product that handles magazine planning and outputs in a format that can be opened in the Desktop Publishing Application. This allows production staff to make manual adjustments when necessary and perform preflight checking prior being sent to the Printing Service Provider.

Blinkplan's strength is that it is browser based & has excellent visual drag and drop capabilities apart from a clean interface, which is a stark contrast with the complex interface of FP. One thing to note is that FP is an off the shelf product, therefore it is expected to have the minimum features that every publications would use regardless of the type of Advertising and layout of the medium. When these features add up within the User Interface, it becomes complex and difficult to handle without training and product knowledge, hence has a steeper learning curve for both users and administrators of the system.

FutureProof Advertising System's strength is that it has advertisement inventory & credit control features that cater for an End-to-End process flow. Advertisements are introduced into the system by collecting detailed information including customer details, advertisement details and the booking details of the advertisement including pricing and agent details. With the availability of customer details and booking details, it is then used for credit control and invoicing. This encourages

advertisement booking across multiple magazine issues and streamlines accounts receivable processes which is integral for a Classifieds Advertising Service Provider to keep a healthy cash flow for the business.

The Inter-Media Publishing System (IMPSYS) intends to improve upon the features of blinkplan and FutureProof Advertising System by providing the basic features required for page planning, advertisement booking and credit control on a web application platform. Additional features such as notifications and scheduled reports will be provided for the management.

### III. TECHNICAL SPECIFICATIONS

To ensure the successful implementation of IMPSYS, a few considerations were made to determine the technical specifications. Factors that were considered is “availability of tools and resources”, “testability”, “extensibility” and “scalability”.

#### A. System Development Methodology

The developer has considered using a hybrid of Rational Unified Process (RUP), with Extreme Prototyping & Test Driven Development (TDD). The proposed hybrid methodology will incorporate the main phases of Rational Unified Process (RUP), with some modifications in the Construction phase.

Based on the initial study of each methodology’s strength and weaknesses, the primary concern for the developer are issues regarding scope creep and extension of the planned development timeframe. RUP will help in defining the scope of the design during the Inception and Elaboration stage, which will prove to be effective in avoiding “analysis paralysis” of Extreme Prototyping and mitigating “scope creep” for Test Driven Development.

This unique setup is necessary to complement the development process & testability in critical components of the system. A description of each phase follows:

##### 1) Inception phase

This is the stage where the idea of the project is clearly defined and what resources will be involved. This mainly includes identifying the key problem areas of the departments in Classifieds Advertising Service Provider.

##### 2) Elaboration phase

The project’s architecture and resources will be further evaluated. User requirements will be analyzed using models and diagrams, and outlines the essential components required for a working system. At this stage, the base requirements of each department should be clear enough to be understood and implemented by the developer, followed by test data can be derived for building detailed test cases for the possible scenarios.

##### 3) Construction phase

The project enters the development stage and will be designed, written and tested. At this stage, additional tools such as Extreme Prototyping & Test Driven Development

will complement the development process. Extreme Prototyping will be used to produce User Interfaces for the Advertiser for entering & searching advertisements, and Production Manager to manage magazine placement (Front End). Test Driven Development will be used for developing & testing the services that the other components will provide, such as Credit Control, Advertiser Profile, Magazine output & Email Notifications (Back End).

#### 4) Transition phase

The software is ready to be released to the public, and feedback gathered from end users. For the purpose of review, the system will be separated into Alpha, Beta and Release stages.

#### B. Programming Language

ASP.NET C# with MVC Framework is selected due to its highly testable features, which is an essential component for Continuous Integration. Online resources on C# programming is also widely available on the internet.

#### C. Database Management System

MS SQL Server (MSSQL) is selected for its RDBMS feature set. It also has excellent compatibility between developer tool & operating systems based on the Microsoft Platform, followed by consistent User Interface across Microsoft suite of products. RDBMS works with strict schema which makes managing data easier when generating reports or performing data exports.

#### D. Digital Publishing Software Chosen

Desktop Publishing Software is commonly used in the Publications Industry for the purpose of creation of documents, with emphasis on design and layout of graphic elements instead of word processing, specifically for Print and Publishing. Its main features include Pagination, Digital Typography and Template Creation. Due to the change in media consumption, Desktop Publishing Software has come equipped with digital content creation capabilities that simplify content development for the new age.

Adobe Indesign CC 2014 is selected primarily for its open development model for non-enterprise level developers. Adobe has its own Publication System for the Enterprise but it has very extensive scripting capabilities that can easily be developed on, as long as the developer has knowledge with Javascript and C languages [24]. Documentation is also available and there is a budding community of scripting developers who work extensively with the Adobe Scripting platform.

The Digital Publishing Software Tool is required for the development of the “Inter-Media Publishing System”. The system will create an XML / JSON output file which will be fed to Adobe Indesign. A Javascript shall parse the XML / JSON file and produce the resulting output in Indesign Templates that will be further processed into PDF or ePub from within the program.

#### E. Cloud Hosting Platform Chosen

The Microsoft Azure Cloud Platform provides platform services that compliments the IMPSYS development and operation needs.

In terms of extensibility, it supports any operating system, language, tool, and framework hence offering a flexibility in the development of future enhancements of IMPSYS, such as adoption of new services such as Machine Learning, or setting up hybrid connectivity with Classified Advertising Service Provider's internal systems (on premise).

In terms of scalability, running IMPSYS on the cloud platform is more economical compared to setting up the infrastructure on premise as it removed the build-up costs of a physical data-center, bandwidth and staffing. In time if the data and bandwidth requirements increases, resources can be scaled up manually or automatically. The transparent reporting of the cloud platform's "pay-as-you-use" model can also help in budgeting operating expenses.

At time of writing, Microsoft Azure has released a number of new services that reduces the complexity of development, such as the Azure App Service offering. Microsoft also provides a starter project in a multitude of programming languages and the abundance of documentation & lab walkthroughs is very useful for anyone to get started on the platform.

#### IV. USER REQUIREMENTS ELICITATION METHODS

A survey and one-to-one interviews was conducted to elicit detailed system specifications of the features for IMPSYS. This includes the public facing website, advertisement management and (if any) value added components for the Classified Advertising Service Provider and the consumer (readers) of the magazine (end product).

##### A. Survey (*Quantitative Research*)

The advantages of using surveys are that it is easy to develop given the availability of online tools such as Survey Monkey and Google Forms. The disadvantage of surveys is that the questions developed for a survey may not apply to everyone in the sample study; hence there is a risk of skewed data depending on the context, and the respondent's experience in the subject topic.

The target group of respondents is first identified as members of the public. Due to lack of direct contact with potential respondents who satisfy the criteria of "Advertiser", a Non-Probability Sampling method (Convenience Sampling) was used. The developer also did not have the appropriate resources to conduct an offline survey due to time constraints. 50 people from members of the public who has access to the Internet were invited to participate in the survey. It is noted that the survey would only be able to cover Internet users who may already be biased towards online services in general.

Next, a set of open and closed questions were formulated, separated into specific sections to collect data from various perspectives regarding Classified Advertising & Inter-Media Publishing System (indirectly). As the advertisers do not interact directly with the Publishing System, questions are limited to the Web Booking Module of the Publishing System (public facing portion of the Website). The questions are then developed using Google Forms (Online survey) and sent the link to the survey by Email and Facebook messaging.

##### B. Interview (*Qualitative Research*)

The advantages of using interview is when conducted in separate sessions for each interviewees, the interviewee do not

get influenced in a group compared to a focus group. The disadvantage of interviews is different interviewees may understand and answer the interview questions in different ways.

The target group of interviewees is first identified. The interviewees are experts in their respective fields, namely key personnel from Sales, Accounting & Productions Department who has working experience in the Classifieds Advertising Service Providers in Malaysia within the last 5 years. The Inter-Media Publishing System relies on the data obtained from the interview to describe "what are the actual processes that occur during operations of a Classified Advertising Service Provider".

Next, sets of structured questions were prepared on Microsoft Word, separated into specific sections to address queries on different areas relating to the Inter-Media Publishing System. Structured questions are used because the developer is looking for specific information. It is also used to keep the data concise and reduce researcher bias.

Next, the interviewees are officially and personally invited to participate in the interview by email correspondence. They are also properly informed of what the project is about, and the appropriate level of consent has been obtained from them on the condition that they remain anonymous. As most of the interviewees are not within the country, the developer has selected the Email method to send the interview questions to each of them with a proposed date of return so that analysis of the data may commence.

#### V. RESULTS

Based on the conducted research, the key findings were summarized as follows:

##### A. Survey

###### 1) Different Needs of Advertiser Types

The two groups of Advertisers (Private & Trade) require different set of features. Private Advertisers may not be using their personal numbers directly on the advertisements due to safety concerns, therefore an alternate way of communication should be provided.

###### 2) Pre and Post Advertisement Booking Services

Advertising Options should be clearly explained and illustrated to the Advertiser. The website should have a log on facility for Advertisers so that they can manage their own advertisement(s).

###### 3) Additional features on top of the eBook reader app

Digitizing content (eBook) may not be enough to convince Advertisers to Advertise on the media. Expectations from Advertisers on how the eBook version of a Classified Magazine should work shows that the reading app should have some built in features for it to be an effective tool and not just for consuming content.

TABLE I

SUGGESTED FEATURES THAT WOULD HELP BUYERS AND SELLERS

Description	Category
Social media sharing	Communication
Facility for buyer to contact seller with single tap or simple steps	Communication
Links to email seller	Communication
Comments or chat box provided	Communication
Statistics	Data
historical database of advertisement - searchable/group by Year make, model and price	Data
Actual photos of products (which may not have been in the ad due to space or cost)	Presentation
Keep it short and simple (KISS)	Presentation
Compare	Presentation
Flexible keyword search	Usability
Bookmark	Usability
Save favourites	Usability
Reminder (Notifications)	Usability
Virtual online help integrating with smartphone app	Usability
Direct option on advertise the item, user friendly make it better	Usability
Ability to submit feedback / review by selecting from list of options rather than having to type too much	Usability

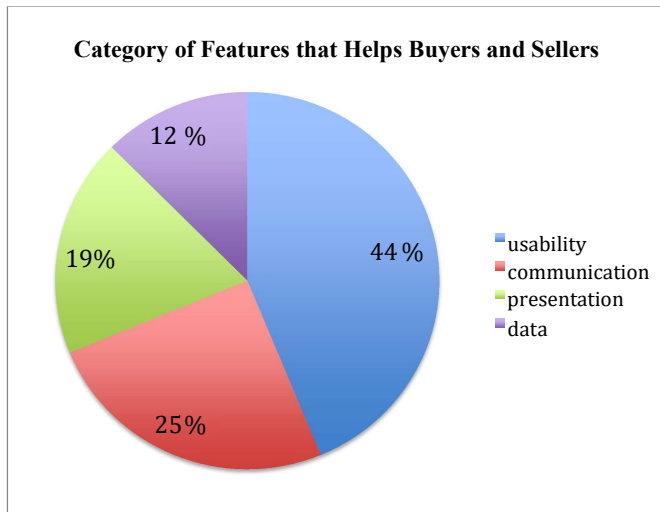


Fig. 3. Summarized number of features by Category. Usability is high in demand due to the personal nature of mobile applications. An eBook version of a Classified Magazine should be more than just an eBook reader app.

It is evident in Fig. 3 that usability features are highly in demand for the eBook reader app (44%), followed by communication features (22%). The developer acknowledges that producing an eBook version of the Print Magazine won't be a "silver bullet" in enhancing the buyer and seller experience that comes with Classified Advertising. It is important to note that this finding also shows that the expectations from Advertisers on how the eBook version of a Classified Magazine

should work. It is evidently much greater than just being able to subscribe the digitized copy from a virtual newsstand.

### B. Interview

The following series of diagrams illustrates key points extracted from the interview.

#### 1) Overview of Activities

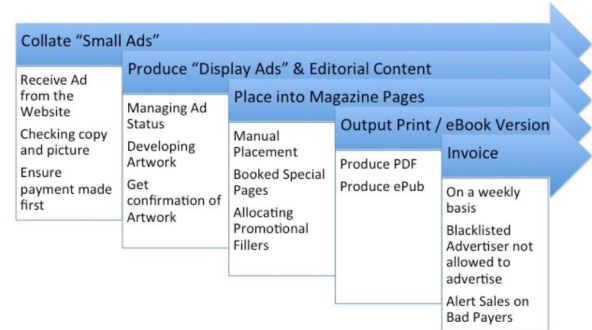


Fig. 4. Overview of Activities in Classified Magazine Productions. Sometimes these activities run concurrency during deadline periods of publishing the magazine.

#### 2) Department Overview



Fig. 5. Departments Overview. These are also users that would be using IMPSYS to manage ads for the Classified Advertising Service Provider, or on behalf of their clients.

#### 3) Types of Advertisers



Fig. 6. Types of Advertisers, blacklist reasons and selling strategy. Advertisers can be grouped by ad spend and who pays for the advertising space (personal or company by invoice). Trade Advertisers are provided additional facilities such as special rates via contracts in exchange for advertising commitment.



#### 4) Types of Advertising Inventory

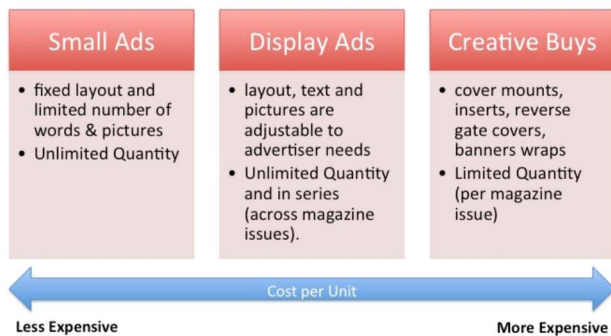


Fig. 7. Types of Advertising Inventory. The Classified Magazine is made up of different types of advertising inventory, each with unique characteristics when applied to page planning processes.

#### 5) Pricing and Packages

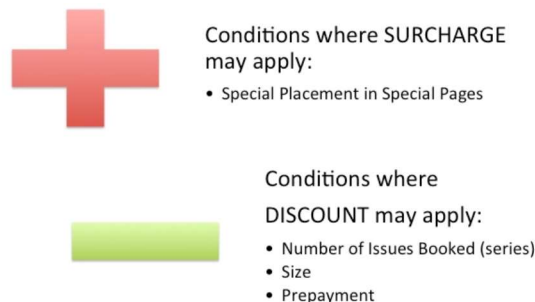


Fig. 8. Pricing and Packages. For all advertising inventories, there are special scenarios where surcharges and discounts are applied to the advertising cost. This is mainly to encourage advertising commitment and a method of maintaining volume in the Classified Magazine.

#### 6) Advertisement Specifications

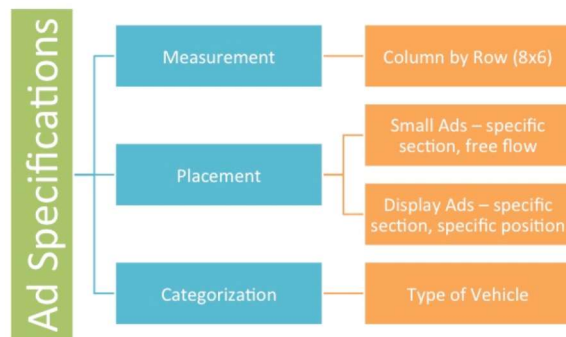


Fig. 9. Advertisement Specification and how it applies to the placement process. “Measurement”, “Placement” and “Categorization” plays an important role in successful advertisement placement process in a Classified Magazine.

#### 7) Print Operations

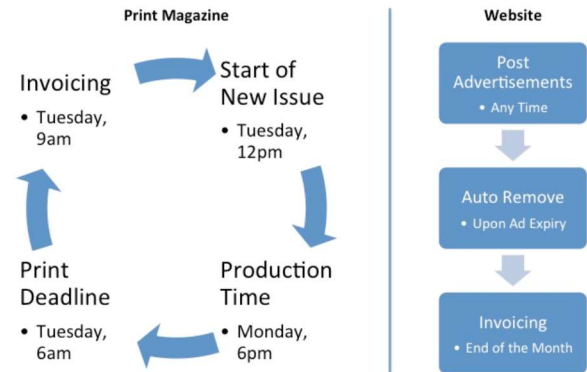


Fig. 9. Media Schedules compared between Print and Web. Note the comparison between schedules of print (repeats itself every week) versus the web (an Advertisement has a fixed life span until expiry). The invoicing timing and frequency also differs between the two media.

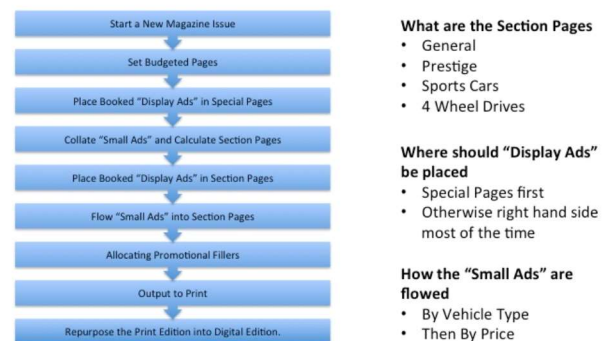


Fig. 10. Sequence of Magazine Page Placement. IMPSYS should be able to assist the page planner by providing visual tools and easy to use page planning tools. Additionally, sharable flat-plan is useful for the Sales Department.

#### 8) Web Operations

An Advertiser Profile is created for Advertisers who advertise through the website. Fig. 11. outlines a typical registration process for a Private Advertiser. A Trade Advertiser would follow the process outlines in Fig. 12.

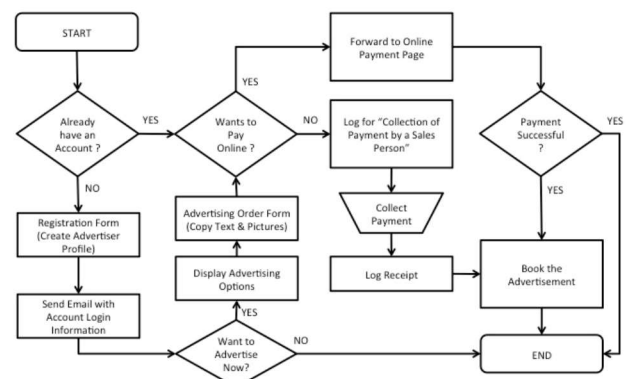


Fig. 11. Web Booking Ad Flow Chart (Private Advertiser)

The following is a list of fields applicable for the Registration Form in the website:

- Name (text)
- Address (long text)
- Phone Number (masked entry)
- Email Address (masked entry)
- Private / Trade Advertiser (radio box)
  - (If Trade Advertiser)
    - Digital copy of business card (image upload)
    - Digital copy of IC (image upload)
- Location (auto complete text box with “Other Location” as free text)

## 9) Billing & Auditing

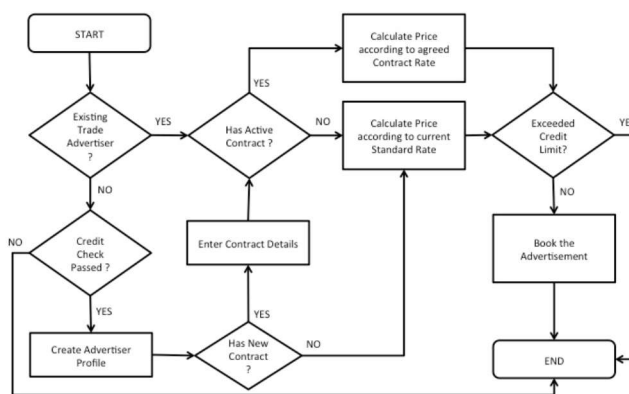


Fig. 12.Booking Ads & Credit Control Flow Chart (Trade Advertisers)

Fig.12 is the process of how a Trade Advertiser is registered into the Advertisement Booking System and when the Credit Limit is checked in the system.

The following is a list of data labels applicable for the Invoice (report) sent to the Trade Advertisers according to the Invoicing schedule (Fig. 9):

- Customer Account Number
- Order Form Number (text)
- Full details of the contract
  - Company Name (text)
  - Company Address
  - Company Phone Number
  - Contact Number
  - Run Number (Number of insertions utilized so far)
  - Current Run Number
  - Number of total Insertions agreed on contract
- Payment Due Date (date)
- Week (date)
- Issue (number)
- Page Number and Position (text)
- Amount to be paid (currency)
- Advertising Company contact details (long text)
- Payment Clause & Methods (long text)
- Aging Period (text)

- Reference Sales Person's Name (text)
- Reference Source Number / Sales Person Code (text)

## 10) eBook Operations

eBook media is a relatively new development in media advertising. The interviewees were concerned with advertiser confidence on the media as it is an untested area compared to the print and web. In the interview, it is identified that repurpose the Print Edition into Digital Edition may not be sufficient since the core of the Classified Advertising Product is “to connect buyers and sellers”. This finding is supported with the findings in the conducted surveys where the Advertisers wants advanced features on the eBook that supplements the “buying and selling” experience.

## VI. DISCUSSIONS

The research methods employed for the elicitation yielded important working information for the purpose of the design of IMPSYS. This includes base architecture and the need of capturing insights from the individual software components that make up IMPSYS.

From the survey, Classified Advertisers have different needs from the website, depending on the purpose of Advertising (whether it is a personal vehicle, or advertising for the purpose of selling multiple vehicles). While it is generally acceptable to introduce the same set of features to both types of Advertisers, it is evident that the needs of Trade Advertisers should take precedence more due to their frequency of advertising spend and longevity of content on the website. The survey also revealed that Advertisers appreciate content-based eBooks more than classified advertising eBooks and have high level of expectation towards the Classified Advertising eBooks media. Some of the suggested features and interactivity required would not be achievable without building a mobile reading app to supplement the eBook content.

From the interviews, it is revealed that the magazine planning process is straightforward but with there are many working variables involved, which are:

- Type of Advertiser
- Type of Advertising Inventory
- Types of Special Pages
- Pricing and Package calculations (and contracts)
- Invoicing Schedules are different for both media
- Credit Limits and exceptions to the rule
- "One Off" and "Series" Ad Booking for Trade Advertisers.

From a business point of view, the idea of repurposing the Print Edition into Digital Edition is not sufficient to ensure marketability of the eBook platform, as the Advertiser would not trust an untested advertising platform. Although it cannot be assumed that the sentiments of reading an eBook would be the same as reading the physical magazine, the stakeholder could gain better insights on the reader (regardless whether buyer or seller, or casual) based on usage behavior.



## VII. CONCLUSION

This research serves as a useful starting point for the requirements analysis aspect Classified Advertising Systems, however implementation may differ across different technologies and publishing tools employed by the operating environment. Future work on this subject may include extensive research into the programming model and technical platform which this system is built on.

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