The updating of digital signage time tables for ads displays

Figure 1
Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LI, LS, MW, NA, RW, SE, SL, SZ, TW), Eurasian (AM, AZ, BY, KG, KZ, MD), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, RU, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:
- of inventorship (Rule 4.17(iv))

Published:
- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
TITLE OF INVENTION DIGITAL SIGNAGE EXCHANGE SYSTEM

FIELD OF THE INVENTION
The present invention relates to the fields and the system of digital signage display and the computer network communications

5 BACKGROUND OF THE INVENTION
The Thai Government has a national development policy of pushing the Creative Economy to encourage Thai entrepreneurs to develop knowledge, innovation and human resources to excel in competitiveness and sustainability. The major drawback hindering the capability of entrepreneurs who fall into the category of Small and Medium Enterprises (SMEs) is a limitation in capital funding to promote products and services including print media, billboards, television and radio, all of which have a high cost per time and per channel. The costs of computer equipment, digital LCD/LED television and Internet services have dropped tremendously and these are now generally found in most household and offices. However, rather than this would benefit SMEs in terms of owning low cost advertising displays, the digital signage solution remains costly and too technical. Large retailers and big firms are deploying digital signage on a large scale to reach more consumers and there is no way the SMEs can compete.

OBJECTIVES OF THE INVENTION
The problems can be overcome if there is an advertising management tool to help SMEs that does not require technical knowledge to produce their own advertisement from existing business pictures and videos. Entrepreneurs just deploy available computers, digital televisions and internet services to make their own in-store advertising displays, whereby all the digital signage displays connected to the same network within a same system can share the media resources, thus allowing an entrepreneur to collaborate with other entrepreneurs and exchange media on their mutual consent. This collaboration allows the advertisers of all types businesses to transfer and distribute their ads in a widespread digital signage network across the country at low cost.

The object of this present invention is to create a community of digital signage displays that supports entrepreneurs who don’t have capability to purchase the traditional ads media and to give them an alternative to promote their ads on their own digital signage displays and on other digital signage displays at the point of sale that join this advertising network
service. The present invention system and method is a tool that member uses to exchange media with all network members over the internet. The outside entrepreneurs can apply to be members and buy spot airtime direct from the digital signage owners, thus increasing income for the members. Collaboration in digital signage exchange will help to increase sales opportunities and save costs in ad buying for all members.

Another object of this present invention is to create awareness among Thai entrepreneurs of the priority of advertising which is an important key to increase opportunities for sales of products and services and improve competitiveness. This present invention shall also motivate new artists and designers to produce many more creative works, generate growth to the value chain of business and eventually increase the competitiveness and sustainability of the Thai economy.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 Block diagram of the Digital Signage Exchange System for ads displays network

Figure 2 Sample prototype of the first page and second page of ads screen layout on the digital TV monitor

**DETAILED DESCRIPTION OF THE INVENTION**

Disclosure of the invention on Figure 1, comprises the Digital Signage Exchange System according to this invention. The member information registration at step 10 is recorded by information of the person or organization, email name and password for accessing the system. The screen information registration at step 20 is recorded by a model of TV screen, screen size, type of business, telephone contact, pinpointing the address location on the web map service, photos of TV display at the location site, model of computer, number of connected TV monitor, pixel resolution, port connection via VGA or HDMI, name of the Internet Service Provider, high speed transmission rate, type of service such as Leased Line, ADSL, WIFI, 3G etc., additional attached devices such as video player, camcorders, satellite dish or cable box, port signal expansion box, thus all connection interfaces are needed to be checked prior to proceeding.

The ads screen management at step 30 is a process to design a prototype of ads display screens of at least two pages according to the information received from the member. Each page has divided the screen layout for displaying ad media upon the designated area named
by the letters as shown in Figure 2. The software tools to control the ad display shall be
installed on the client computer, including designer program, controller program and
player program then will continue with application testing by means of equipment or
deVICES connecting through the Internet until ready for service. All ad displays are to be set
ad airtime prices to advertiser on monthly or half monthly basis rated up to five different
levels, depending on screen size, location and number of viewers.
Member logs in user name and password to access the web site for the credit purse
management at step 40. The event of ads selling or the barter trade causing of fund transfer
between the parties, the credit purse is provided to support credit point addition and
deduction. The same means is used for the transaction fee deduction according to the type
of transaction requests. By way of system provisioning, the member can top up a credit
purse via online credit card payment from any issuing financial institution in the proportion
1:1 (one credit point, one Baht). In case the purse has collected a number of credit points,
the member can request to redeem credit points for cash and pay fee for a fund transfer
rated by the Bank.
In order to prepare media for ad display according to Figure 2, the member will transfer the
ad media files to the tool system by uploading pictures and videos into the host server at
step 50. After the transfer is completed, a collection list of photo and video media is ready
for next step commands.

The ad display request of the areas A and B at step 60 is exclusively feature for the owner
of ad displays to bring an uploaded collection of ad media showing on full-screen of the
area A 210 and to show a text running message on screen of the area B 220 by the date and
time specified.
In order to exchange ad media with the other ad displays, member uses the ad exchange
request of the area C at step 70. Member can search for existing ad displays that near to the
business location or from business type or from district and province of interest or from the
shop name. After making selection, the system checks the availability status of ad displays
and number of credit points required for a transaction fee and a surplus if both exchange
parties have different airtime prices. In the event the advertiser doesn't have ad display to
exchange, the ad buying rate is applied. As soon as the member confirms a request order,
emails will be sent out to notify both exchange parties.
At the ad exchange notification for the area C at step 80, thereafter the exchange parties 
open the request emails, they can review the picture or video contents that they are 
supposed to exchange. The system will record the acknowledgement and email acceptance 
or rejection back to the request party. Both parties can review the exchange request 
anytime they want so if there is no cancellation prior to due date then the exchanged media 
will present on screen area C 230 as scheduled date and time. 
The system of the present invention incorporates a web deal system for members to 
announce current promotional deals or other special promotions on the website including 
discount, reward, free gift voucher, ticket, coupon and discount card, etc. The web site will 
show picture, content, price, start date and end date of the promotion of product and 
more, also the member can request to advertise promotion deals on the screen of ad 
displays in figure 2, which is reserved for the special promotion deal announcement of the 
area D at step 90. The member selects ad displays the same way as doing the ad exchange 
request of the area C at step 70. The system will show the credit points required after 
confirming the number of ad displays to publish the special promotion. As soon as the 
order is confirmed, the credit points will be deducted from the buyer's credit purse and 
mail order record to the member as evidence and the selected number of ad displays will be 
assigned to present special promotion deal at the display area D 240 as scheduled date and 
time. 
The updating of digital signage time tables for ads displays on step 100, according to the 
works in the step 20 to 80 are starting points of several processes that must proceed from 
there. In order to keep up times for the correspondence procedure, prior to update the ads 
displays on screen area A, B, C, each new updating of ad media for all members will be 
scheduled twice a month, on the 1st and 15th of every month. 

By means of complex tools and devices, the design of the tools system has removed the 
difficulties and technical process and instead provided simple steps that are easy to 
understand for the user. All parts of the system are independently operated and 
communicated so the digital signage display runs continuously even if the internet is down. 
While the digital signage exchange system requires significant professional and managed 
services to support members, the operator charges transaction services fees based on type 
and number of transaction requests including the commission from ads selling. By way of
system and method, transaction fees will automatically be deducted from the credit purses of the parties. For the digital signage exchange reporting at step 110, the member can access the system to check a credit purse, transaction fees report and a history report of digital signage exchange.

THE BEST MODE FOR CARRYING OUT THE INVENTION
As completely disclosed in the detailed description of the invention.
CLAIMS

1. The system and method of Digital Signage Exchange is comprised of following steps.
   The member information registration (10) records information of the individual or
   organization's name, email and password for access to the system.
   The screen information registration (20) records information of digital TV model, location
   map, type of business, computer information, display interfaces, Internet service and
   attached devices.
   The ads screen management (30) is where the prototype screens being created by ads
   media of the member and the pricing of ads displays are set in 5 different levels. The
   installation and testing is coordinated from the location by way of the server system and
   the equipment or devices connected through the Internet.
   The credit purse management (40) provides a purse system process to add or deduct credit
   points in replacement of a cash process. By means of the system device, members may top
   up credit points from outside using online credit card payment and as well the credit points
   redemption for cash back.
   The uploading of pictures and videos into the host server (50) prepares for media and data
   transfer and presents the collection of media files to be used for exchanging with other
   Members.
   The ad display request of the areas A and B (60) is an exclusive screen request for the
digital signage owner to display full-screen images and video media on the ad monitor and
   to announce text running message at the bottom of the screen on the scheduled date and
   time.
   The ad exchange request of the area C (70) provides search and selection process for the ad
   displays to be confirmed and exchange between the parties.
   The ad exchange notification for the area C (80) provides email communications for both
   exchange parties to review the request and return the acknowledgement.
   The special promotion deal announcement of the area D (90) provides search and selection
   processes for the ad displays to confirm the buying order and the method for publishing
   ads from the web deal promotions.
The updating of digital signage time tables for ads displays (100) is scheduled twice a month to update media and timelines of the digital signage, on the 1\textsuperscript{st} and 15\textsuperscript{th} of every month.

2. The method as claimed in claim 1, wherein process steps (10) to (110) may be included in the same equipment or the separate devices and each part can work independently of each other, therefore the digital signage display can run continuously even if the internet is down.

3. The system and method of tool system as claimed in claim 2, by means of complex tools and devices within the system, the design of the tools system has removed the difficulties and technical process and just left simple steps that are easy to understand and convenient for the user.
The member information registration

The screen information registration

The ads screen management

The credit purse management

The uploading of pictures and videos into the host server

The ad display request of the areas A and B

The ad exchange request of the area C

The ad exchange notification for the area C

The special promotion deal announcement of the area D

The updating of digital signage time tables for ads displays

The digital signage exchange reporting

Figure 1
Sample prototype screen of the full-screen ad display on the digital TV monitor.

Sample prototype screen of the exchange ad display on the digital TV monitor.

Figure 2
INTERNATIONAL SEARCH REPORT

INTERNATIONAL APPLICATION NO.
PCT/TH2012/000016

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: G06Q, G06F, H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC, CNPAT, CNKI: ad, advertisement, register, registration, screen, display, create+, credit, upload, area,
exchange, promotion, select, time, table, update+, schedule, member, server, message, media, internet, network

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:
  "A" document defining the general state of the art which is not considered to be of particular relevance
  "E" earlier application or patent but published on or after the international filing date
  "L" document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)
  "O" document referring to an oral disclosure, use, exhibition or other means
  "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
18 Aug. 2012 (18.08.2012)

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## INTERNATIONAL SEARCH REPORT

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CLASSIFICATION OF SUBJECT MATTER
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G06Q40/00(2012.01)i