Abstract
This paper describes the typical Thai document styles and layouts, analyzed from 5 types of documents, that is, newspaper, textbook, magazine, manual, and newsletter/article/letter. Most of which are de facto standards or the modified version for individual use. Formal documents are recommended to follow the official styles of documents, at least the minimum necessary information are required. Some styles received a strong influence from English (American) writing, especially the styles used in writing manuals or technical documents. Some authors try to introduce punctuation marks to reduce the ambiguity. In general, writing a Thai text does not need any punctuation marks except for a space to break a long paragraph with no regularity. Writing style is also a conventional issue. There is no rigid regularity. Computer has a great affect on the current Thai writing style. In this paper, we summarize the styles in the groups of deletion, hyphenation, caption, emphasis mark, listing, indentation, and alignment. Most of them can be expressed in more than one way.

Introduction
At present, we cannot deny the importance of computer and the Internet as a bridge of the world. A large amount of documents are produced and spread throughout the world everyday via the Internet. Standardization of Thai document processing is, therefore, needed as a guide of creating documents.

Considering the Thai writing system or Thai document processing, except the syntactic rules or grammar, there is no obvious regulation for composing a text. Punctuation, writing style or the presentation is modified differently by the author’s familiarity. This analysis is an attempt to investigate some characteristics of Thai writing system with the purpose of submitting a standard for Thai writing system.

The study focuses on some particular writing systems, including deletion, hyphenation, caption, emphasis mark, listing, indentation, and alignment. The sources of study are 10 newspapers, 20 textbooks, 10 magazines, 5 manuals, and 10 newsletters/articles/letters.

Document Types
The Thai writing styles have been surveyed throughout the typical five types of documents, namely, newspaper, textbook, magazine, manual, and newsletter/article/letter. There is not yet a standard for the document types but at least the de facto standard of each type is widely used in today documents. Followings describe the document structures of some samples extracted from the current circulated articles.

1. Newspaper
Comparing with English newspaper, it is found that the general characteristics and layout style of Thai newspaper are alike. An article is started with a headline. The font size of the headline depends on the stress putting onto the article. In each news article, the first paragraph presents the summary of the incoming news. In general, all paragraphs in an
article use the same font size. It is occasionally found that the first line of the news is printed in bold font to stress on the incoming news.

Figure 1 A sample of article column in the newspaper

2. Textbook
The text in the textbook is generally divided into chapters beginning with preface, table of contents and description or guide of the textbook. If it is a school book, there is a statement issued by the authority assigned from the Ministry of Education. At the end of the textbook there is a list of the editing committee. Figure 2 shows a sample of a chapter of the textbook. Figure 3 and 4 are samples of the publishing information.

Figure 2 A chapter in the textbook
3. Magazine
There is no style in common at all. It most likely depends on the design of the publisher. A set of unique fonts and layouts are kept to identify the original of the magazine. Decorated fonts are richly used to make it colorful in contrast to the style of textbook. Many small columns are distributed throughout the page to provide detail information are occasionally found. Figure 4 shows variation of the column styles found in general magazine articles.
A two-column article

A rarely used hyphen is found in this article

Footnote of magazine title and the issue date

Emphasized text in bold font

Emphasized text in bold font

Decorated font for the title of the article

Author’s name

Figure 4 Variation of the column styles in magazine articles

Computer manual is a good example of this category because it is extensively found in the bookstores. There are both translated text and the Thai original text. However, the English (American) technical writing style has already affected the Thai writing style. There is no any difference in the text structure. Figure 5 shows a part of the text in a manual for computer. In contrast to general Thai text, the punctuations are used in order to lessen the ambiguities that occur when the modification is not clear. The punctuation is very useful especially for the text that needs to avoid misunderstanding.

5. Newsletter / Article / Letter

The text in this category consists of header and body. The header includes a logo, and the title of either the company name and address, or the announcement. The body includes issue number, affiliation of the addresser, date, subject, addressee, reference (if have), attachment (if have), text body, postscript, signature, printed name, post of the addressee, issuing organization (may include name of contact person, telephone number, fax number, email address). Depending on the degree of the formality, some items may be omitted.
Writing Styles

1. Deletion
Deletion here refers to “to remove some words, phrases or sentences that have been written or printed from the document”.

From the investigation, deletion mark was not found. It may say that it is because of the wide use of word processor or computer instead of typewriter, that we can remove any characters by using “backspace” or “delete” bottom.

Note: Deletion was used in the document produced by typewriting. There are 3 types of deletion mark concluded by our competence.
2. Hyphenation

Hyphenation normally means the dividing of a word between two lines of text using a hyphen (-). In word processing, hyphenation refers to splitting a word that would otherwise extend beyond the right margin. However, existing Thai word processor does not support correctly automatic hyphenation. Users have to define themselves where a word should be divided. Generally, word will be divided at the boundary of each syllable. Pali-Sanskrit word should be divided at the morpheme boundary (root, prefix, suffix). [1], [2]

For example

a) ... ดินระเบิดอย่างร่วนแรงประเภทหนึ่ง ประ-กอบด้วยดินฟูชนิดหนึ่ง...

b) ... น้ำหนักน้อยกว่าพัดถลุด้วยพิเศษ... (ถูก) จดหมายไปรษณีย-บัตร ไปรษณียบัตรตอบรับ หนังสือกิติยคลี ...\n
Note: Hyphen ( - ) is used to indicate hyphenation, in addition, it has other functions in Thai writing system as followings;

1. For orthography (pronunciation form), hyphen is used between each syllable.

For example

ประกาศนียบัตร อ่านได้ทั้ง ประ-กา-สะ-นี-ยะ-บัด และ ประ-กาล-สะ-นี-ยะ-บัด
[The word “ประกาศนียบัตร” is pronounced either “ประกาศ-กา-สะ-นี-ยะ-บัด” or “ประกาศ-กา-ล-สะ-นี-ยะ-บัด”]

2. Hyphen is used for the meaning of “and” or “or”

For example

a) สมบัติ – สมศรี มีความยินดีขอเรียนเชิญท่านเป็นสักขีพยานในงานมงคลสมรส... [Sombat and Somsri would like to invite you to witness the marriage…]

b) การแข่งขันฟุตบอลรอบตัดเชือกระหว่าง ไทยเอ – พม่า [Football match between Thai A and Myanmar]

3. Hyphen means “to” in representing the duration of time, location and amount.

For example

a) เวลา 10.00 – 11.00 น. [time 10.00 to 11.00]

b) ตั้งแต่วันอังคาร – พฤหัสบดี [from Tuesday to Thursday]

c) ระยะทาง กรุงเทพฯ – อุทยาน [distance Bangkok to Ayudhaya]

d) ประมาณ 100 – 150 [about 100 to 150 persons]

4. Hyphen is used to indicate the description or the explanation of the former word.
For example

a) ถิ่น – พายัพ
[dialect – south] Hyphen is used between two words to elucidate that dialect here refers to the dialect of the south.
b) บทความ – สารคดี
[article – documentary] Hyphen is used to specify that the article is "documentary" (not entertainment story)

5. Hyphen is often used instead of number or alphabet for representing “listing”

For example

นักศึกษาต้องผ่านวิชาต่างๆ ดังนี้
- วิชา กข 112
- วิชา กข 113
- วิชา กข 114
[Students have to pass the following subjects
  - AB112
  - AB113
  - AB114]

6. Hyphen is used to separate group of number.

For example

a) โทรศัพท์ 662-564-6900
[Telephone number 662-564-6900]
b) ISBN 974-229-073-3
c) รูปที่ 1-12
[Figure 1-12]

3. Caption
Caption or a title and other related description of a particular object such as table, picture, or diagram is found either above or below the object. In addition, the caption can be aligned on the left, right, or center of the object.

Caption is always found in a specific pattern composing of 2 elements, the order of the object and the description, as followings;

[type of object] [ordinal number] [title and/or description]

For example

a) รูปที่ 1 กราฟแสดงรายได้ตลอดปี
[Figure 1 Graph shows the annual income]
b) ตารางที่ 12.2 รายได้ประชาชาติประจำปี 2545
[Table 12.2 GNP of the year 2002]
c) ภาพที่ 9 การเจริญเติบโตของทารกในครรภ์
[Figure 9 Growth of the infant]
d) รูปที่ 6 ตัวอย่างการแปลจากภาษาอังกฤษเป็นภาษาไทย แสดงให้เห็นการทำงานทั้งหมดของระบบ

[Figure 6 Example of English to Thai translation shows the whole process]

e) รูปที่ 4 วิธีการเดินทางที่ใช้ depth-first search

[Figure 4 Traversing path of depth-first search]

The style of writing depends on the editors. It is found that the orders of the object, (object and ordinal number), are written with bold, italic, or underlining. The title and description are also found in italic, normal, or smaller as shown above.

However, from the investigation, caption can be expressed only the description, without the series of the object.

*For example*

รูปภาพแสดงโปรแกรม FreeAmp

[Screen shot of FreeAmp]

**4. Emphasizing mark**

In text composition, writer can change his font style to indicate the “emphasized” constituent. The emphasized constituents occurred in the investigated sources are header, topic, technical term, important words/phrase/ point, quotations or any other element the writer want to make it more noticeable. It is not limited to a character. It can be a word, a phrase or even a sentence.

From our investigation, there are 3 emphasizing marks;
1. Font style:- bold, italic (different from the majority)
2. Underlining:- single or double underline
3. Quote: single or double quote

*For example*

a) ล้านนา: ยุคก่อนประวัติศาสตร์

[Pre-history Lanna]

There was an aborigine in Lanna region…

b) …แต่ยังมีดอกไม้เล็กๆ สีม่วงๆ ขึ้นตามพื้นมากย่ามซึ่งเรียกว่า “โครงเหลือง” โครงเหลืองนี้เป็นพืชในวงศ์กั้นแอนเดอ...

[“Klong-kheang” Klong-kheang is a plant in the same family of …]

c) จนกระทั่งอาการตื่นเต้นเหมือนในวัยเด็กมาเยือนอีกครั้ง ก็เมื่อได้ไปเยือน พิพิธภัณฑ์ของกองทัพอากาศ (Royal Thai Air Force Museum) ที่บางนาครับ

[…until the excitement in the early age recalls when visiting the Royal Thai Air Force Museum]

d) 2. ภาษากลาง ภาษากลางคือ...

[Intermediate language The Intermediate language is …]
e) Item 48 Submission report Follow the form 16 in the attachment by filling the following details

48.1 Registration number Fill the registration number in the article
48.2 From Fill post or the affiliation..

f) [...] will hold the meeting on December 12, 2002, during 13.00 – 14.00 at meeting room 2...

[...] hold the meeting on December 12, 2002, during 13.00 – 14.00 at meeting room 2...

5. Listing
The constitution of the Office of the Prime Minister concerning the official documents (announced in 1983) [3] defines how to use “number” for expressing listing as followings;

1. Sub-topic can be divided into “section” and each section can be sub-divided into 4 levels by using number and “.” as

1.1
1.1.1
1.1.1.1

2. If the second section should be divided, it can be also divided into 4 levels, and ( ) is introduced to identify each level. For example,

1.1.1.1(1) 1.1.1.1(2) 1.1.1.1(3)
1.1.1.1(1.1) 1.1.1.1(1.2) 1.1.1.1(1.3)
1.1.1.1(1.1.1) 1.1.1.1(1.1.2) 1.1.1.1(1.1.3)
1.1.1.1(1.1.1.1) 1.1.1.1(1.1.1.2) 1.1.1.1(1.1.1.3)
3. If there is no sub-topic, the topic list can be identified by the “alphabet”, such as ข๐ or (n).

Laws and official announcements have their styles in creating listing as well. [4]

For example

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>มำตรำ ๑</td>
<td>dddddddddddddddddddddddddddddd</td>
</tr>
<tr>
<td>(๑)</td>
<td>ddddddddddddddddddddddddddd</td>
</tr>
<tr>
<td>(๒)</td>
<td>dddddddddddddddddddd</td>
</tr>
<tr>
<td>(๓)</td>
<td>dddddddddddddddd</td>
</tr>
</tbody>
</table>

Even though there is a regulation in composing “listing” in the official document, it is not strict in general writing. However, it can be concluded that the components of “listing” are number and/or alphabet and/or symbol [ (), ], .

6. Indentation

Indentation is a space left at the beginning of a line of print or writing. It is normally appeared at the beginning of a paragraph. (The remaining lines are typed to the left-hand margin.) For general document, there is no rule of indentation. How many spaces left before the first alphabet depends on the writer. But it has to be consistent along the document. From our investigation, the space of indentation found is 10.5 mm., 11.5 mm., 12.5 mm., 20.0 mm., 25.4 mm., 32.0 mm., and 42.0 mm.

In particular, for the ordered listing, there are 2 types of indentation as shown below.

```
1. dddddddddddddddddddddddddddddd
   1.1 dddddddddddddddddddddddddd
       1.1.1 ddddddddddddddddddddd

2. dddddddddddddddddddddddddddddddd
```

7. Alignment/Justification

Thai writing system is left-right direction. The document, in general, is left alignment, and there is no restriction for alignment. In addition, paragraph justification is not accepted in all case.

However, alignment phenomenon is found in some cases.
1. In official letter, the components are aligned restrictively. For example, date is center alignment, salutation is left alignment, and so on. [3]
2. Caption can be left, right or center alignment.
3. Sub-topic is always aligned left.
4. In the table of content, page number is right alignment.
5. Table
   5.1 Table header is usually center alignment.
   5.2 Number is center alignment.
   5.3 Text is left alignment.
   5.4 Number (money) is right alignment.

For example

<table>
<thead>
<tr>
<th>รายการ (Item)</th>
<th>จำนวน (Amount)</th>
<th>ราคา (Price)</th>
<th>(Table header)</th>
</tr>
</thead>
<tbody>
<tr>
<td>คอมพิวเตอร์ (Computer)</td>
<td>2</td>
<td>40,000.00</td>
<td></td>
</tr>
<tr>
<td>เครื่องพิมพ์ (Printer)</td>
<td>1</td>
<td>50,000.00</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion
Software applications in desktop and publishing environment have a strong influence on publishing styles and layouts. Unfortunately, publishing technology in Thailand depends on the major applications developed by foreign countries. Many writing conventions had to be adapted to conclude the styles. The progress of original technology development and the establishment of open standards, such as XML, have provided opportunity to make arrangement to fulfill our needs in Thai original conventions. This survey and summarization is a part to conclude the document styles and layouts at the end.

Acknowledgement
Thanks to Charoen Tangtrongbenchasil, Chutima Pisarn, Kriangchai Yaoyuenyong and Sanon Chimmanee in helping the survey.

Reference
1. Information Research and Development Division, National Electronics and Computer Technology Center. Thai Font, 2001. (in Thai)