

# WAN-IFRA's ISO 12647-3 Implementations in Newspaper Printing Press Impacts and Benefits of the Project

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Sri Lanka.

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- Why Standardization was required to us.?
- Challenges on Newspaper Printing/Production
- Brief Overview of the ISO 12647-3- 2013 Quality Standard for Newspaper Production
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# Introduction to WNL



**We innovate and lead**  
Newspapers, Magazines and Digital Publishing  
with Powerful Advertising Solutions



# History & Overview of the Company

- ◎ One of the prominent private sector newspaper publishers in Sri Lanka.
- ◎ Started its operations in 1979 with tabloid size Children's Paper.
- ◎ Later moved to periodicals, daily and weekends National Newspapers and magazines.
- ◎ Market leader and with revenue wise market share of 65%
- ◎ WNL operates its productions in two locations namely Colombo and Hokandara.
- ◎ Currently, It's 90% of the printing is carried out at Hokandara press complex.





# HOKANDARA PRESS COMPLEX

- ◎ The Hokandara press complex was started in 2006/7.
- ◎ The factory premises and the factory buildings were designed in an environmentally friendly manner with a sound proof press rooms.
- ◎ Currently There are 200 Employees working at the premises.





# WNL's Publications



Daily Newspaper



Weekend Newspaper



Daily Newspaper



Weekend Newspaper



Daily Newspaper



Weekend Newspaper



Daily Tamil Newspaper



Daily Business Newspaper



Society Magazine



Youth's Weekly



Women's Weekly



Sinhala IT Magazine



Tamil Children's Paper



Children's Weekly



Pre School Monthly



Women's Monthly



Guy's Monthly



Braille Newspaper

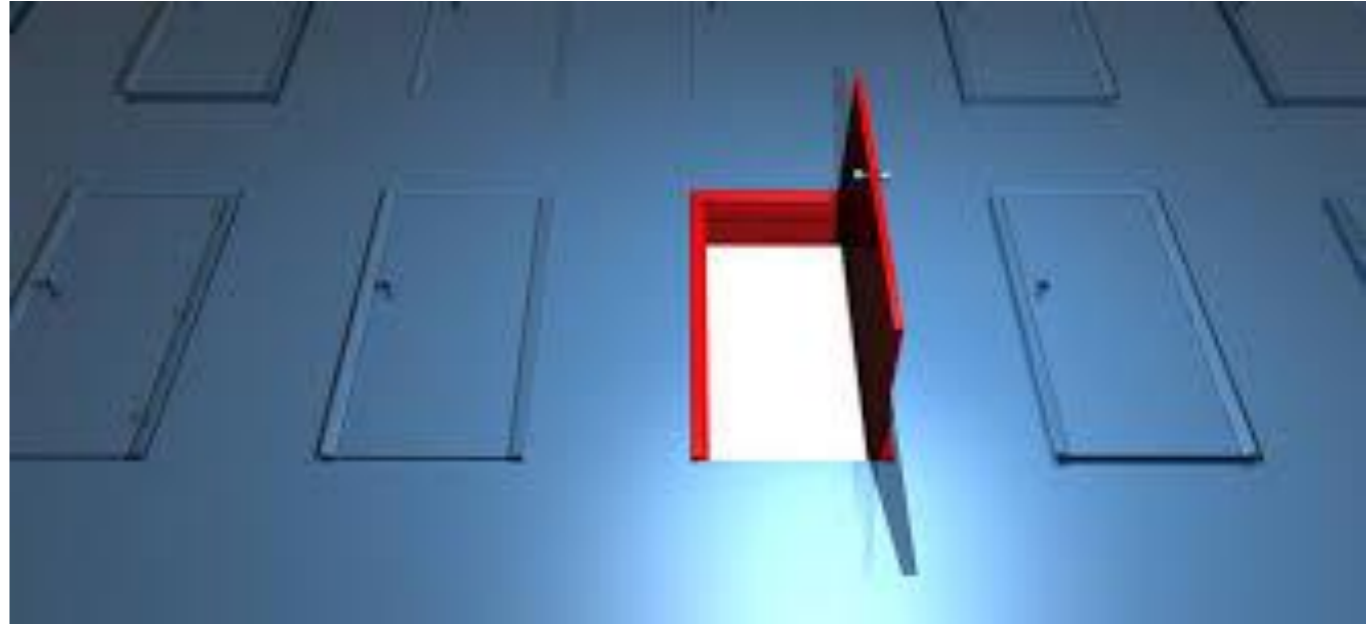


# Why Standardization ??



# Why Standardization was required to Wijeya Newspapers Ltd?

1. After the 30 years old's war was over in 2009, then **the new market place was opened to everyone**. Many international businesses & brands came in to Sri Lanka and the economy was also developed in the country. As a result of that, an attractive, High quality printed products were expected by Advertising Agencies.





# Why Standardization was required to Wijeya Newspapers Ltd?

## 2. Shifted to print in full colour production-

Having all pages in colour has become a fundamental feature of WNL printing.



424 Pages

252 Pages



# Why Standardization was required to Wijeya Newspapers Ltd?

## 3. Age of the printing presses-

We have quite old Presses and 80% of productions are printed on old Manugraph NewsLine and Hi-Line Presses. So, the Quality of reproduction was the main challenge;

- 20% of Productions are printed on - 1994 and 1998 manufactured machines.
- 60% of Productions are printed on Hi-Line-1&2 (14 Towers) manufactured in 2006 & 2009.
- Remaining is printed on Goss Magnum press (7 Towers) manufactured in 2013.





## 4. Lack of Skilled Labour

We do not have enough educational institutions for studying printing technology to recruit qualified printers.

- No Diploma, Higher Diploma or Degree level educational programmes for Printing technology.
- No printing technology in university curriculums.

So, Unskilled employees are being recruited and trained. It takes time to develop as qualified printers.

**Keeping consistency on reproduction was a challenge;** Quality is depended on operator experience and skill.



*Are we facing a skills shortage?*

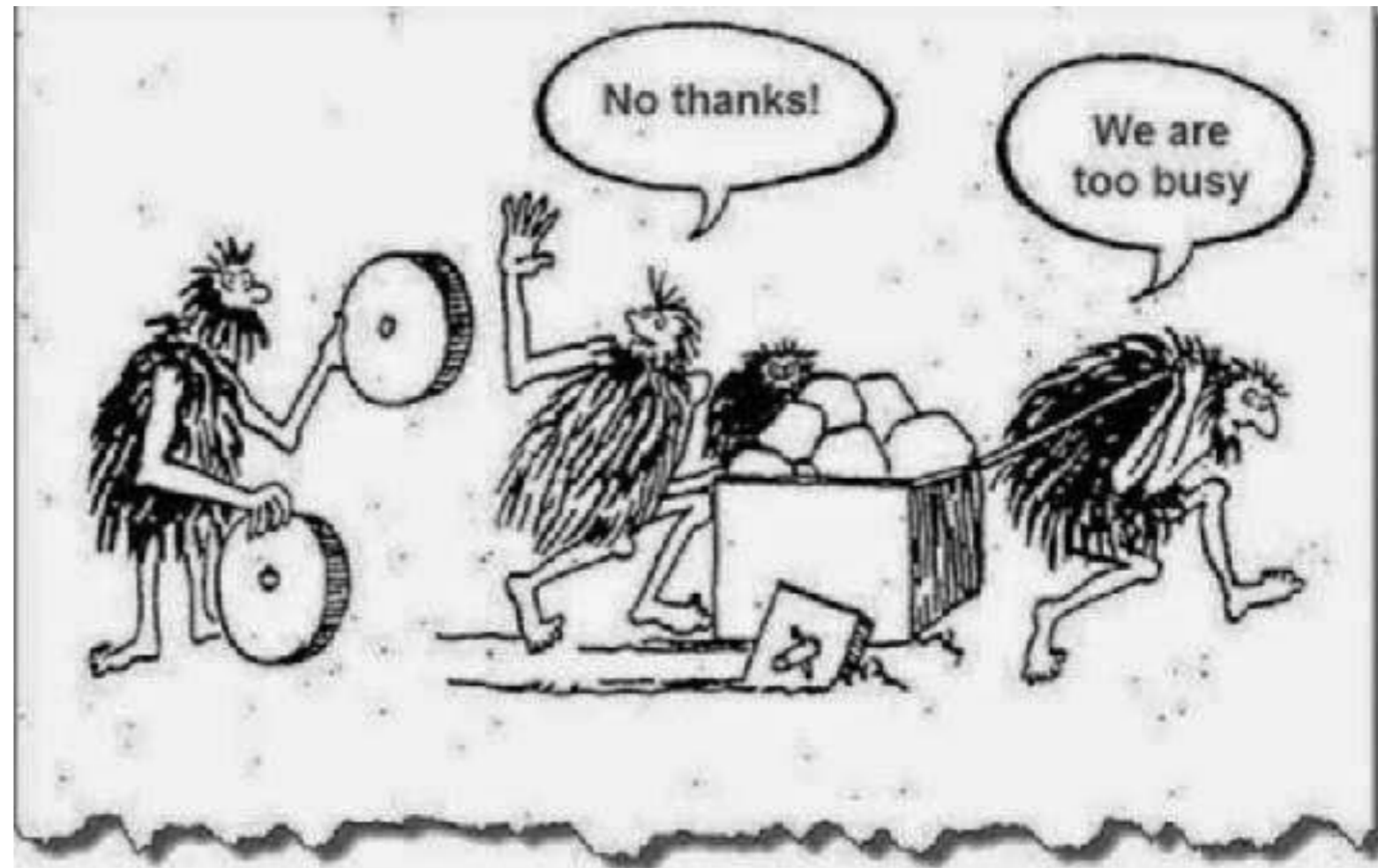


# Why Standardization was required to Wijeya Newspapers Ltd?

## 5. Employee Attitude

WNL is an quite old company about 40 years old by now.

- Employees are reluctant to change their way of doing or practices.
- Employees have a fear about new systems and standards to implement. (on over work, etc. etc.)





# Challenges on Newspaper Reproduction

1. Customer complaint rate was increased both;
  - Readers
  - Advertisers
2. Free advertisements need to be printed over the complaints on quality issue. It hit to the company profit.



# Challenges on Newspaper Reproduction

3. Printing waste generation was increased.

4. Operational cost was significantly increased.

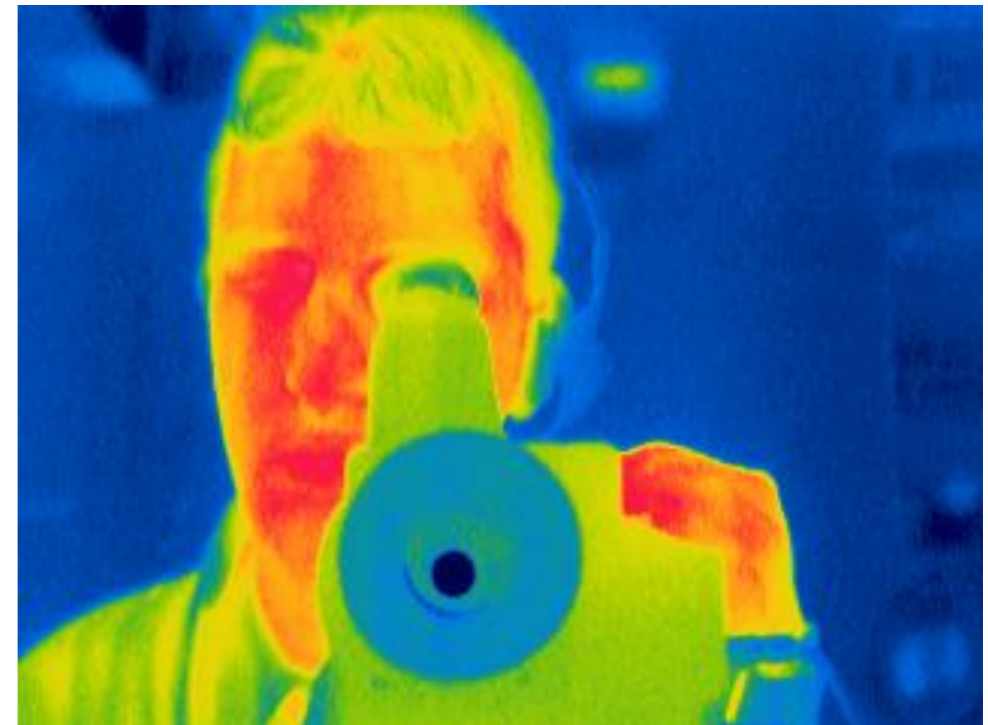


**ISO 12647-3 Standard is the Solution**



# Milestones of the Journey

- Organized a Pre-Press Audit and Training By WAN-IFRA
- Mechanical Audit on Press by WAN-IFRA with pme maurer GmbH
- Mechanical Service on Press by Manroland
- Comprehensive Audit from Pre-Press to Post Press followed by a training by WAN-IFRA
- ISO 12647-3 Implementation Project by WAN-IFRA





# Brief Overview of the ISO 12647-3- 2013 Quality Standard for Newspaper Production



# What is the ISO 12647-3 ?

## “Quality Standard for Newspaper Production”

- ISO 12647-3:2013 specifies a number of process parameters and their values to be applied during newspaper production covering all the stages of pre-press and press.



# Evaluation Scheme

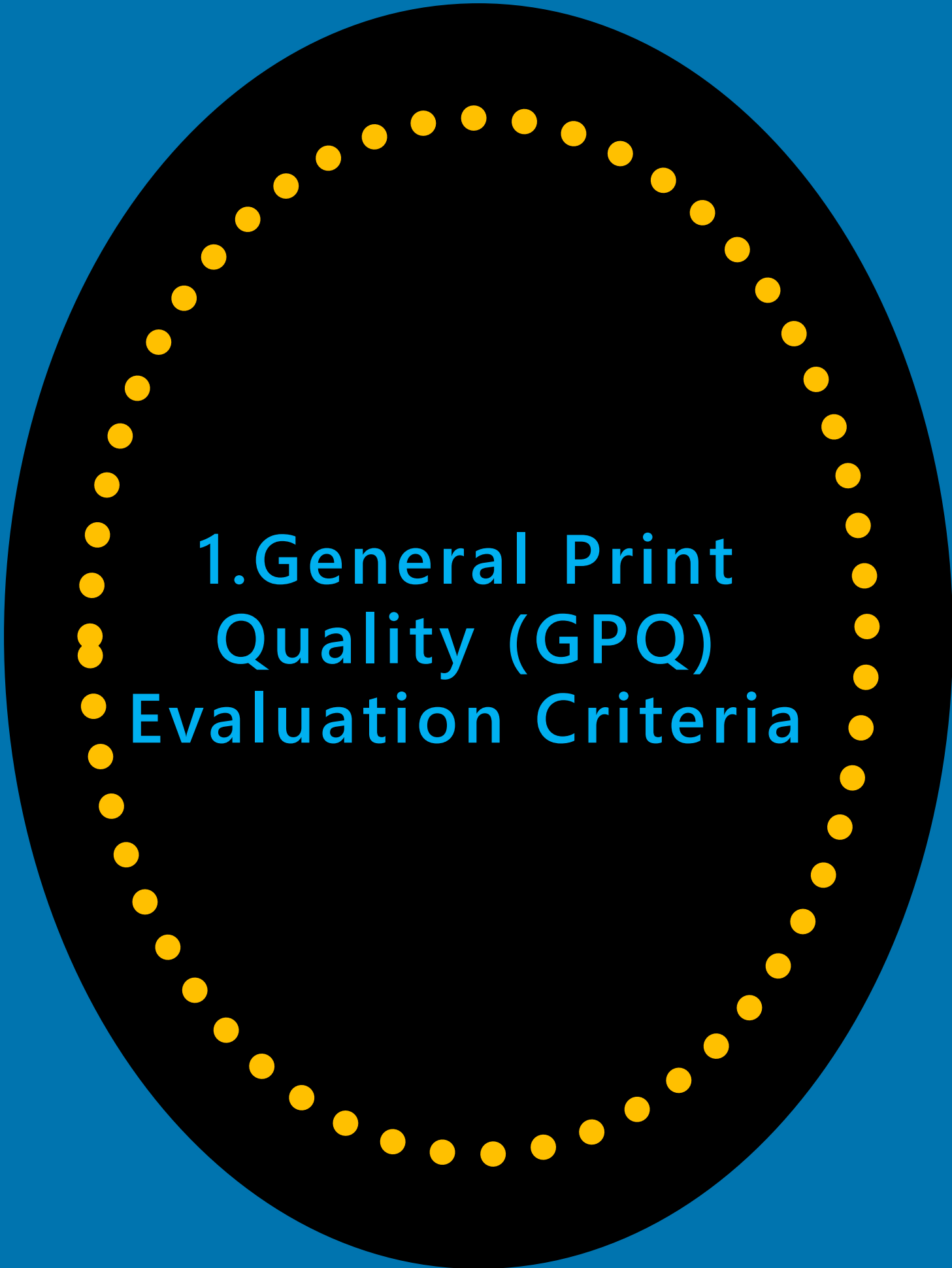
**There are 3 evaluation schemes,**

**1. Work through Audit & General Print Quality Test (Samples which need to be sent to WANIFRA for General Evaluation)**

**2. Evaluation of Cuboid (By sending 9-12 samples to WANIFRA)**

**3. Audit at the site (by conducting a post audit after sending all 9-12 samples to WAN-IFRA) in this Audit, A Test Print need to be done at the site.**





1. General Print  
Quality (GPQ)  
Evaluation Criteria

# 1. General Print Quality (GPQ) - Evaluation Criteria

## Sample evaluation sheet

There are **18 areas** that is evaluated & deducted marks in the evaluation which covers both press and prepress.





# In The Press Operations

## THE 18 STEPS OF THE EVALUATION CRITERIA

**1**

---

Over inking,  
under inking,  
density  
fluctuations,  
Scum.

**2**

---

Disturbing show-  
through, print  
through, strike  
through

**3**

---

Disturbing  
misregister

**4**

---

Disturbing Set off

**5**

---

Impression from  
dear rollers &  
path rollers

# In The Press Operations

## THE 18 STEPS OF THE EVALUATION CRITERIA

**6**

---

Dirt stains,  
Impressions of  
marks(Finger  
prints)

**7**

---

Printing plate  
edges

**8**

---

Printing Plate  
Scratches

**9**

---

Poor lateral  
register, Poor  
ribbon register

**10**

---

Disturbing toning



# In The Press Operations

## THE 18 STEPS OF THE EVALUATION CRITERIA

**11**

---

Paper wrinkles-  
Creasing

**12**

---

Hickeys / Picking  
(Fluff  
accumulation)

**13**

---

Pin holes in  
image area

**14**

---

Slur/doubling



# In The Pre-Press Operations

## THE 18 STEPS OF THE EVALUATION CRITERIA

**15**

Deficient sharpness, Low resolution, moire

**16**

Colour cast

**17**

Deficient contrast, brightness

**18**

Deficient tonal reproduction (flat, missing highlight, shadow)



## Evaluation of General Print Quality (GPQ)

|                   |                                  |
|-------------------|----------------------------------|
| Project / Contest | <b>ISO 12647-3 Certification</b> |
|-------------------|----------------------------------|

| Evaluation criteria              |    |   | Points deducted |           |
|----------------------------------|----|---|-----------------|-----------|
| Maximum points                   |    | Defect parameter  | Per page        | All pages |
| <b>Print process quality</b>     | 1  | Over inking or under inking, density fluctuations               | 1               | 16        |
|                                  | 2  | Disturbing Show-through, Strike-through, Print-through          | 1               | 16        |
| <b>Color register</b>            | 3  | Disturbing mis-register   | 1               | 16        |
| <b>Mechanical</b>                | 4  | Disturbing set-off  | 1               | 16        |
| <b>print quality</b>             | 5  | Impressions from draw rollers, path rollers                     | 1               | 16        |
|                                  | 6  | Dirt stains, finger print marks                                 | 1               | 16        |
|                                  | 7  | Printing plate edges  | 1               | 16        |
|                                  | 8  | Printing plate scratches  | 1               | 16        |
|                                  | 9  | Poor lateral register, poor ribbon register                     | 1               | 16        |
|                                  | 10 | Disturbing toning   | 1               | 16        |
|                                  | 11 | Paper wrinkles / Creasing                                       | 1               | 16        |
|                                  | 12 | Hickeys / Picking (Fluff accumulation)                          | 1               | 16        |
|                                  | 13 | Pin holes in image area   | 1               | 16        |
|                                  | 14 | Slur / Doubling   | 1               | 16        |
| <b>Image and graphic quality</b> | 15 | Deficient sharpness, low resolution, moiré                      | 1               | 16        |
|                                  | 16 | Color cast  | 1               | 16        |
|                                  | 17 | Deficient contrast, brightness                                  | 1               | 16        |
|                                  | 18 | Deficient tonal reproduction (Flat, missing highlight / shadow) | 1               | 16        |
| Maximum points deduction         |    |   | 18.0            | 288.0     |

|  |              |
|--|--------------|
| Minimum points for conformity with the standard        | <b>250.0</b> |
| Deductions for deficiencies                            | <b>71.0</b>  |
| <b>Achieved points for General Print Quality (GPQ)</b> | <b>217.0</b> |

|       |  |
|-------|--|
| Title | <b>Wijeya Newspaper - Daily Mirror</b> |
|-------|--|

| Ded.      | Sum.       | Sample date: 20-Apr-18 |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|-----------|------------|------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
|           |            | 1                      | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| <b>12</b> | <b>3</b>   | x                      | x |   | x |   | x | x | x |   | x  | x  |    | x  | x  | x  | x  |
| <b>6</b>  | <b>11</b>  |                        |   | x | x |   |   |   | x |   |    |    |    |    |    |    |    |
| <b>1</b>  | <b>0</b>   | x                      |   |   |   |   |   |   | x | x | x  |    | x  |    | x  |    |    |
| <b>0</b>  | <b>4</b>   |                        | x |   | x | x |   | x | x |   |    | x  | x  | x  | x  | x  | x  |
| <b>0</b>  | <b>0</b>   |                        |   | x |   |   |   |   |   |   |    |    |    |    |    |    |    |
| <b>4</b>  | <b>0</b>   |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
| <b>0</b>  | <b>0</b>   |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
| <b>0</b>  | <b>1</b>   |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
| <b>0</b>  | <b>1</b>   |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    | x  |
| <b>0</b>  | <b>0</b>   |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
| <b>9</b>  | <b>10</b>  | x                      | x |   |   | x |   | x |   |   |    | x  | x  | x  |    | x  | x  |
| <b>3</b>  | <b>3</b>   |                        | x |   | x |   | x | x |   | x |    | x  | x  | x  |    | x  | x  |
| <b>10</b> | <b>10</b>  |                        |   |   | x |   |   |   |   |   |    | x  |    |    |    |    | x  |
| <b>71</b> | <b>4.0</b> | x                      |   | x | x |   | x |   |   |   | x  | x  | x  | x  |    | x  | x  |
|           | <b>4.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>4.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>7.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>3.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>4.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>4.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>4.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>3.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>4.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>4.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>6.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>5.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>3.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>6.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|           | <b>6.0</b> |                        |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |

**Observations:**  
 Again, Un even inking and set-off seems was the dominant quality defect, which was noticed in several pages and color cast in few pages too. Acting on these parameter will improve the over all visual quality.



## Evaluation of General Print Quality (GPQ)

|                   |                                  |
|-------------------|----------------------------------|
| Project / Contest | <b>ISO 12647-3 Certification</b> |
|-------------------|----------------------------------|

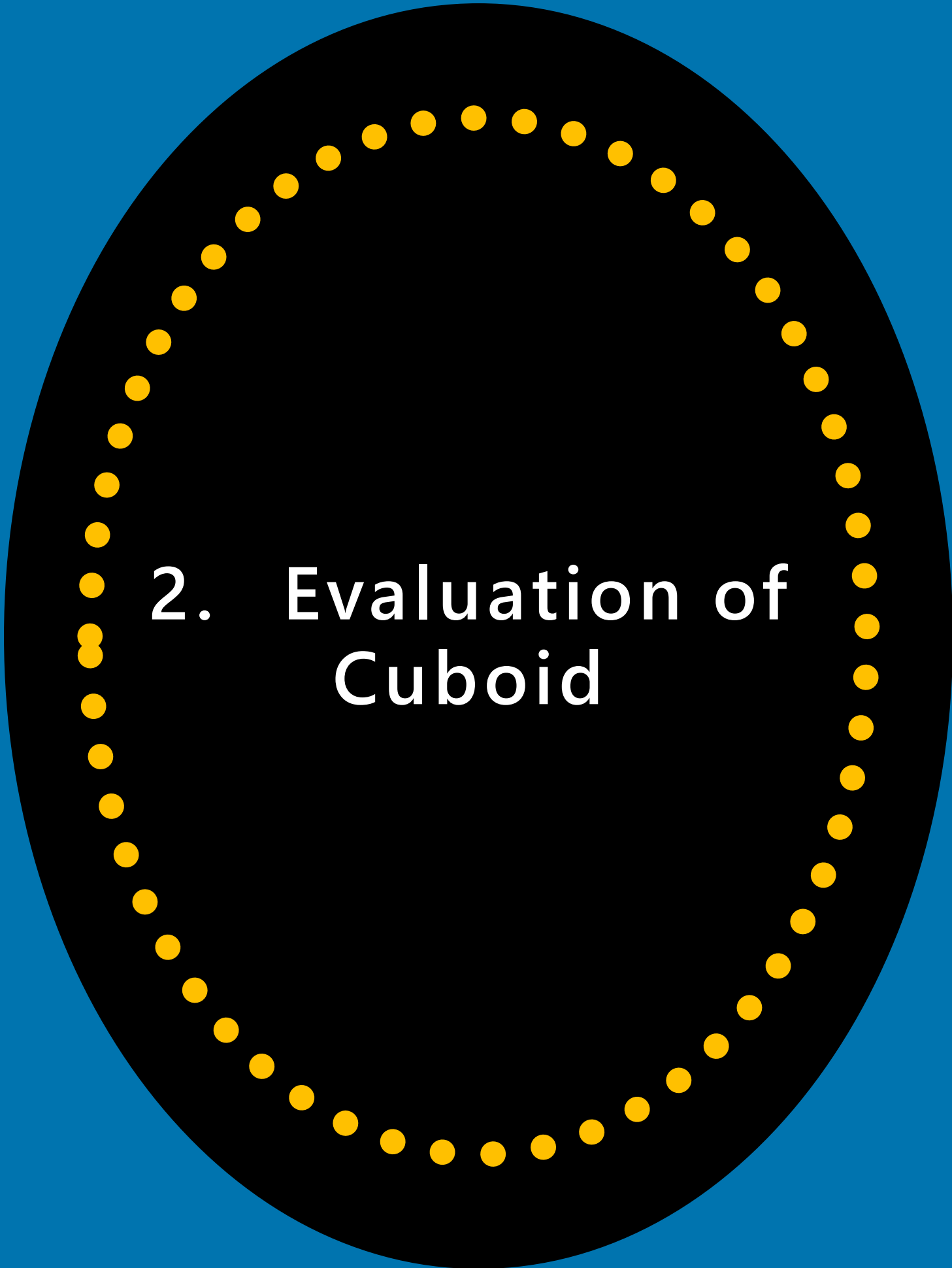
| Evaluation criteria              |    |   | Points deducted |           |
|----------------------------------|----|---|-----------------|-----------|
| Maximum points                   |    | Defect parameter  | Per page        | All pages |
| <b>Print process quality</b>     | 1  | Over inking or under inking, density fluctuations               | 1               | 16        |
|                                  | 2  | Disturbing Show-through, Strike-through, Print-through          | 1               | 16        |
| <b>Color register</b>            | 3  | Disturbing mis-register   | 1               | 16        |
| <b>Mechanical</b>                | 4  | Disturbing set-off  | 1               | 16        |
| <b>print quality</b>             | 5  | Impressions from draw rollers, path rollers                     | 1               | 16        |
|                                  | 6  | Dirt stains, finger print marks                                 | 1               | 16        |
|                                  | 7  | Printing plate edges  | 1               | 16        |
|                                  | 8  | Printing plate scratches  | 1               | 16        |
|                                  | 9  | Poor lateral register, poor ribbon register                     | 1               | 16        |
|                                  | 10 | Disturbing toning   | 1               | 16        |
|                                  | 11 | Paper wrinkles / Creasing                                       | 1               | 16        |
|                                  | 12 | Hickeys / Picking (Fluff accumulation)                          | 1               | 16        |
|                                  | 13 | Pin holes in image area   | 1               | 16        |
|                                  | 14 | Slur / Doubling   | 1               | 16        |
| <b>Image and graphic quality</b> | 15 | Deficient sharpness, low resolution, moiré                      | 1               | 16        |
|                                  | 16 | Color cast  | 1               | 16        |
|                                  | 17 | Deficient contrast, brightness                                  | 1               | 16        |
|                                  | 18 | Deficient tonal reproduction (Flat, missing highlight / shadow) | 1               | 16        |
| Maximum points deduction         |    |   | 18.0            | 288.0     |

|  |              |
|--|--------------|
| Minimum points for conformity with the standard        | <b>250.0</b> |
| Deductions for deficiencies                            | <b>63.0</b>  |
| <b>Achieved points for General Print Quality (GPQ)</b> | <b>225.0</b> |

|       |  |
|-------|--|
| Title | <b>Wijeya Newspaper - Daily Mirror</b> |
|-------|--|

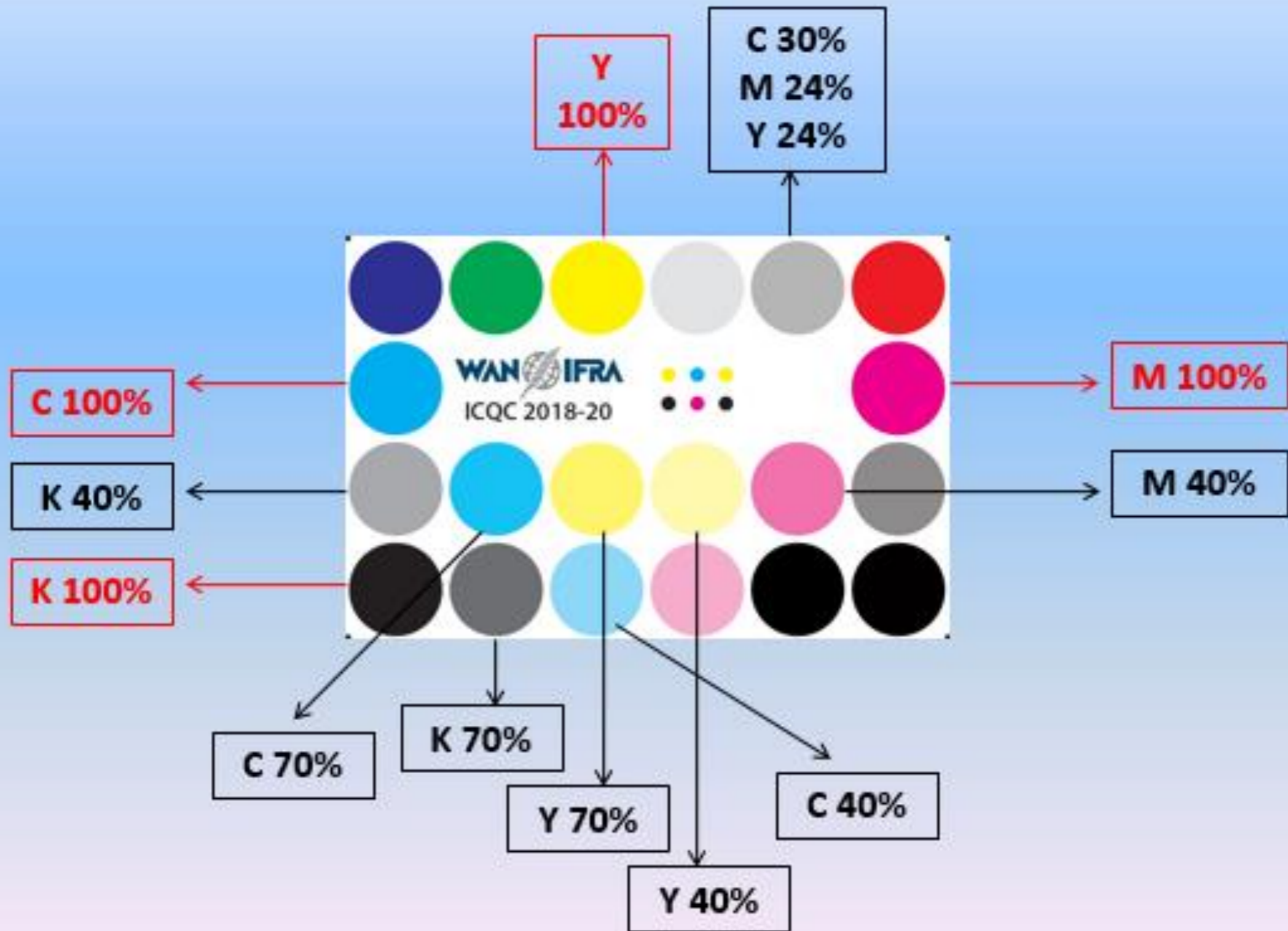
| Ded.      | Sum. | Sample date: 19-Apr-18 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----------|------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|           |      | 1                      | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  |
| <b>11</b> |      |                        | x   |     |     | x   | x   | x   | x   |     |     | x   | x   | x   | x   | x   | x   |
| <b>5</b>  |      |                        | x   | x   |     |     | x   | x   |     |     |     |     |     |     |     | x   |     |
| <b>2</b>  |      |                        |     |     |     |     |     |     |     | x   |     |     |     |     |     |     | x   |
| <b>12</b> |      |                        | x   | x   | x   | x   | x   | x   | x   | x   | x   | x   |     |     |     | x   |     |
| <b>5</b>  |      | x                      |     |     |     | x   |     |     |     | x   |     | x   |     | x   |     |     |     |
| <b>0</b>  |      |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>3</b>  |      | x                      |     |     |     |     |     |     |     |     |     | x   |     |     |     | x   |     |
| <b>0</b>  |      |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>0</b>  |      |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>0</b>  |      |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>3</b>  |      |                        |     | x   |     | x   |     |     |     |     |     |     |     |     |     | x   |     |
| <b>0</b>  |      |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>3</b>  |      |                        |     |     | x   |     | x   | x   |     |     |     |     |     |     |     |     |     |
| <b>0</b>  |      |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| <b>6</b>  |      |                        |     | x   | x   | x   |     |     |     | x   | x   |     |     |     |     |     | x   |
| <b>2</b>  |      |                        |     |     |     |     | x   |     |     |     |     |     |     |     | x   |     |     |
| <b>3</b>  |      |                        |     |     |     |     |     |     | x   |     |     |     |     | x   |     |     | x   |
| <b>8</b>  |      | x                      |     | x   |     |     |     |     | x   | x   |     |     | x   | x   | x   |     | x   |
| <b>63</b> |      | 3.0                    | 3.0 | 5.0 | 3.0 | 5.0 | 5.0 | 4.0 | 4.0 | 5.0 | 2.0 | 4.0 | 3.0 | 4.0 | 3.0 | 5.0 | 5.0 |

|   |
|---|
| <b>Observations:</b><br>Un even inking and set-off seems to be the major concern, which was noticed in many of the pages. Acting on these parameter will improve the over all visual quality. |
|---|



## 2. Evaluation of Cuboid

# Evaluation of Cuboid





# Evaluation of Cuboid (cont.)

## Cuboid



## Description

|   |         | 1    | 2        | 3    | 4   | 5    | 6    |
|---|---------|------|----------|------|-----|------|------|
| A | Cyan    | 100% | 100%     | 0%   | 10% | 30%  | 0%   |
|   | Magenta | 100% | 0%       | 0%   | 8%  | 24%  | 100% |
|   | Yellow  | 0%   | 100%     | 100% | 8%  | 24%  | 100% |
|   | Black   | 0%   | 0%       | 0%   | 0%  | 0%   | 0%   |
| B | Cyan    | 100% | WAN IFRA |      |     | 0%   | 0%   |
|   | Magenta | 0%   | WAN IFRA |      |     | 0%   | 100% |
|   | Yellow  | 0%   | WAN IFRA |      |     | 0%   | 0%   |
|   | Black   | 0%   | WAN IFRA |      |     | 0%   | 0%   |
| C | Cyan    | 0%   | 70%      | 0%   | 0%  | 0%   | 50%  |
|   | Magenta | 0%   | 0%       | 0%   | 0%  | 70%  | 42%  |
|   | Yellow  | 0%   | 0%       | 70%  | 40% | 0%   | 42%  |
|   | Black   | 40%  | 0%       | 0%   | 0%  | 0%   | 0%   |
| D | Cyan    | 0%   | 0%       | 40%  | 0%  | 52%  | 44%  |
|   | Magenta | 0%   | 0%       | 0%   | 40% | 44%  | 38%  |
|   | Yellow  | 0%   | 0%       | 0%   | 0%  | 44%  | 38%  |
|   | Black   | 100% | 70%      | 0%   | 0%  | 100% | 100% |

# Evaluation Criteria for Cuboid

| No           | Criteria                    | Marks      |
|--------------|-----------------------------|------------|
| 1            | News shade                  | 30         |
| 2            | Midtone spread CMYK         | 10         |
| 3            | Dot Gain at 40%             | 10         |
| 4            | Dot Gain at 70%             | 10         |
| 5            | Gray balance                | 30         |
| 6            | Colour space                | 11         |
| 7            | Colour conformity (delta E) | 49         |
| 8            | Diagonal Colour Register    | 30         |
| <b>Total</b> |                             | <b>180</b> |

**Minimum Score to Pass => 156**

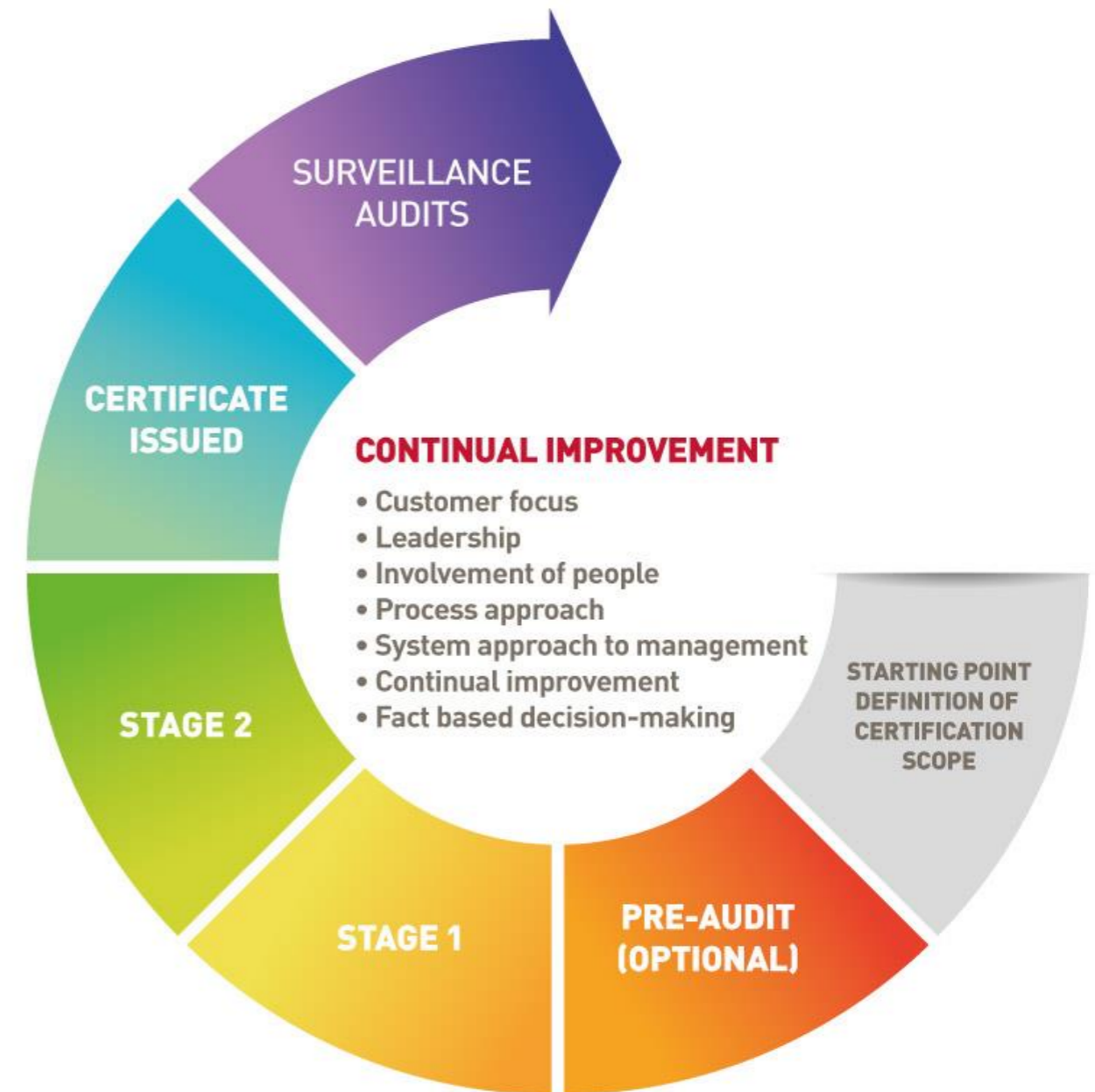


3. Post Audit  
(site visit)



# This audit is conducted by dividing production workflow into 7 areas as follows

- Data delivery & RIP
- PRE-PRESS workflow
- Plate-making
- Material, instruments & Measurements
- Press control desk
- Press Parameters
- Audit test print



**There are 74 parameters that use for the evaluations under all above 7 areas.**



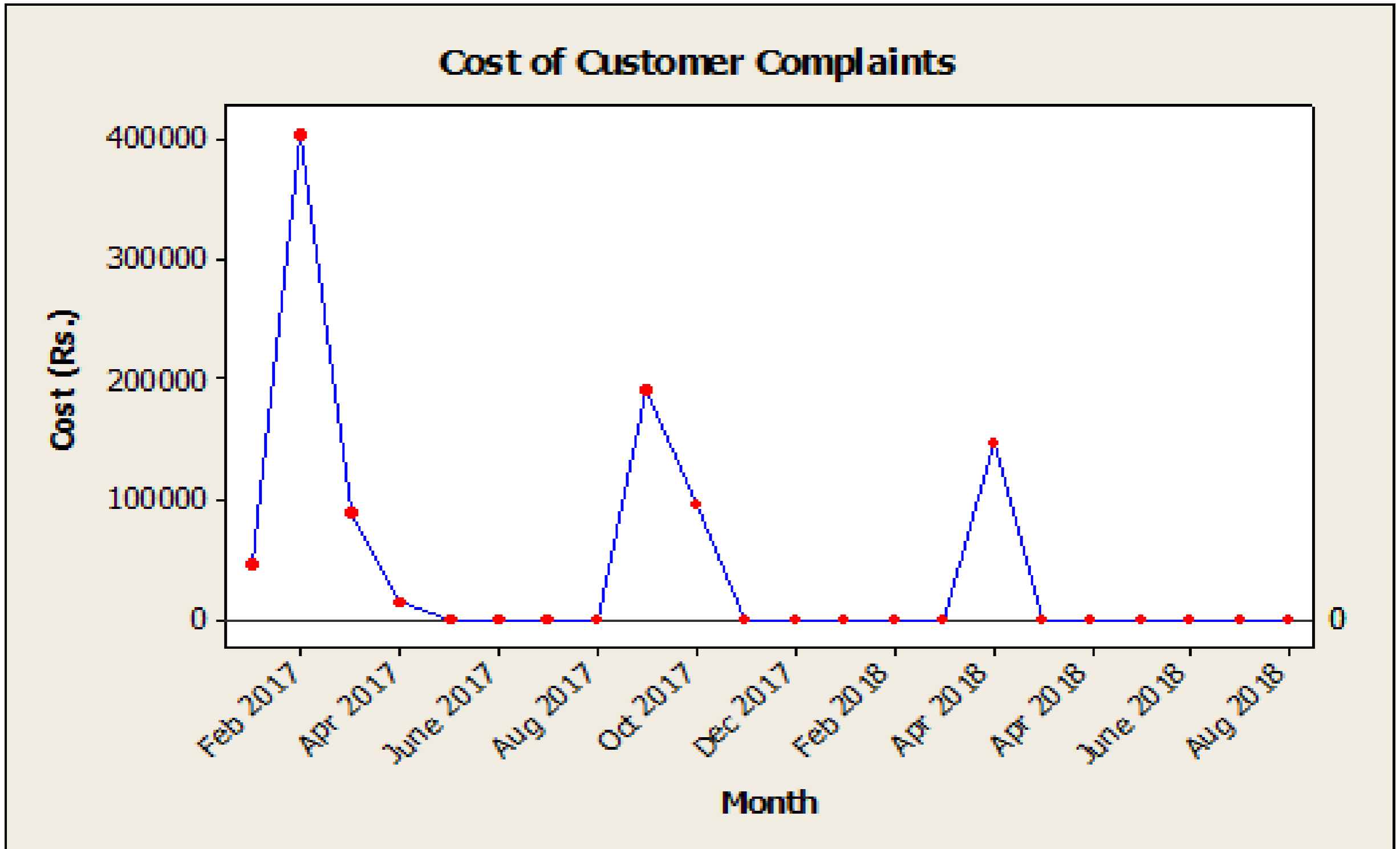
## Outcomes from the Project

## ISO 12647-3 project helped to;

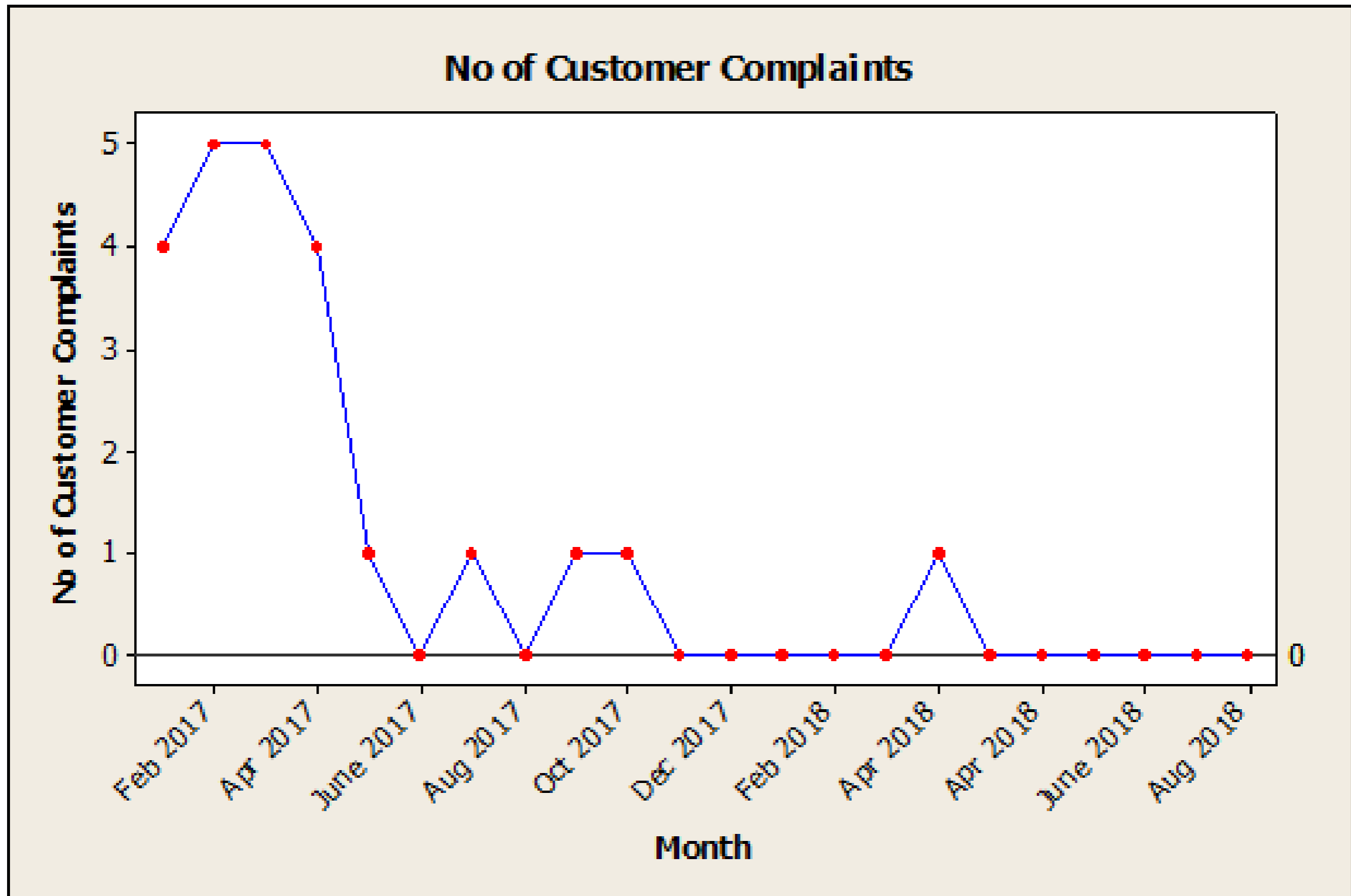
- Improve the customer satisfaction
- Completely stop the complaints on free-Advertisement
- Developed internal competition among two working shifts of the printing team.
- Improve the employees' moral
- Develop good working culture in the organization
- Significantly reduce the waste generations
- Reduce material consumptions



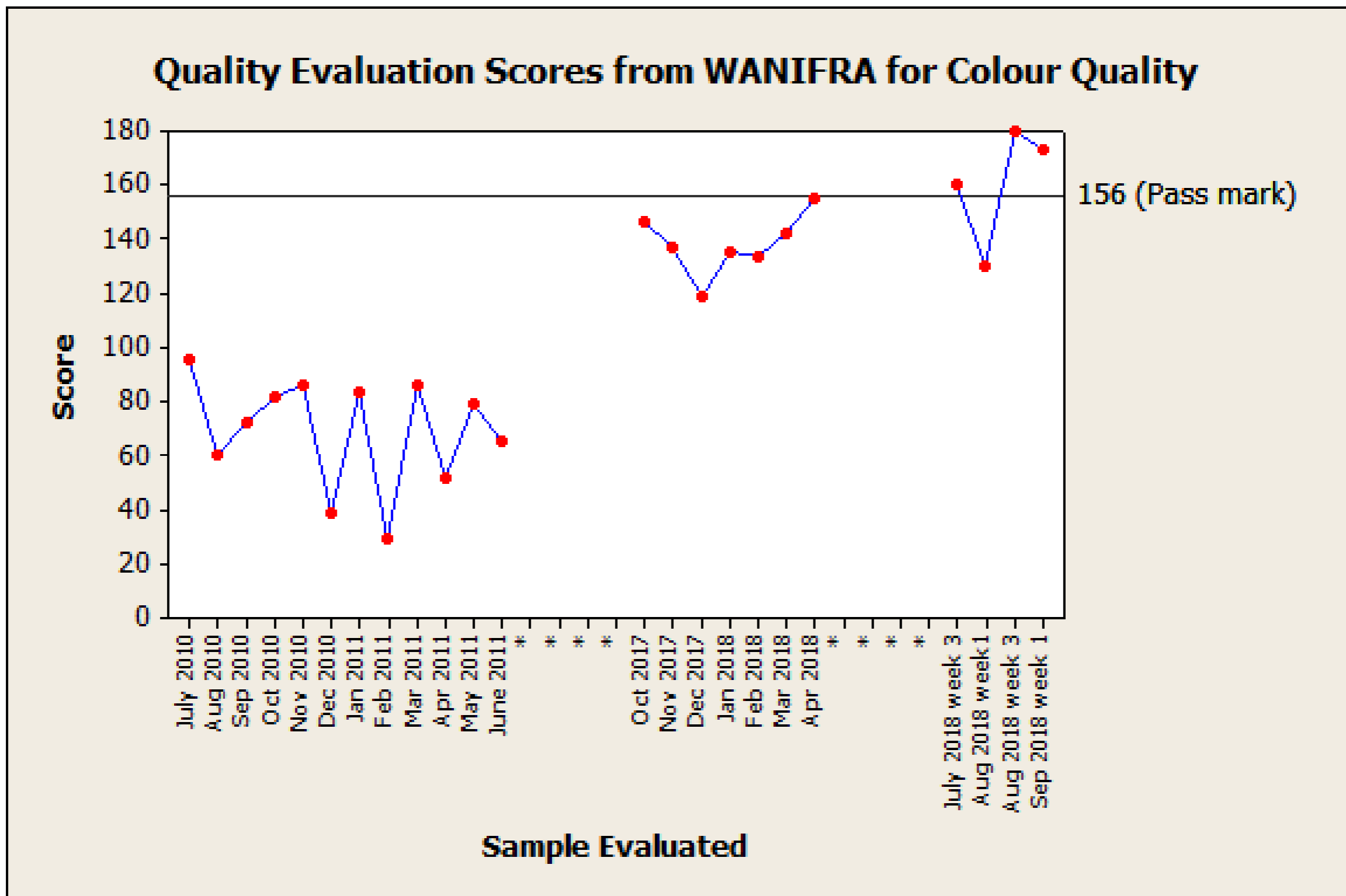
# Free Advertisements Cost Reduction before Vs. after



# Customer Complain Reduction Before Vs. After



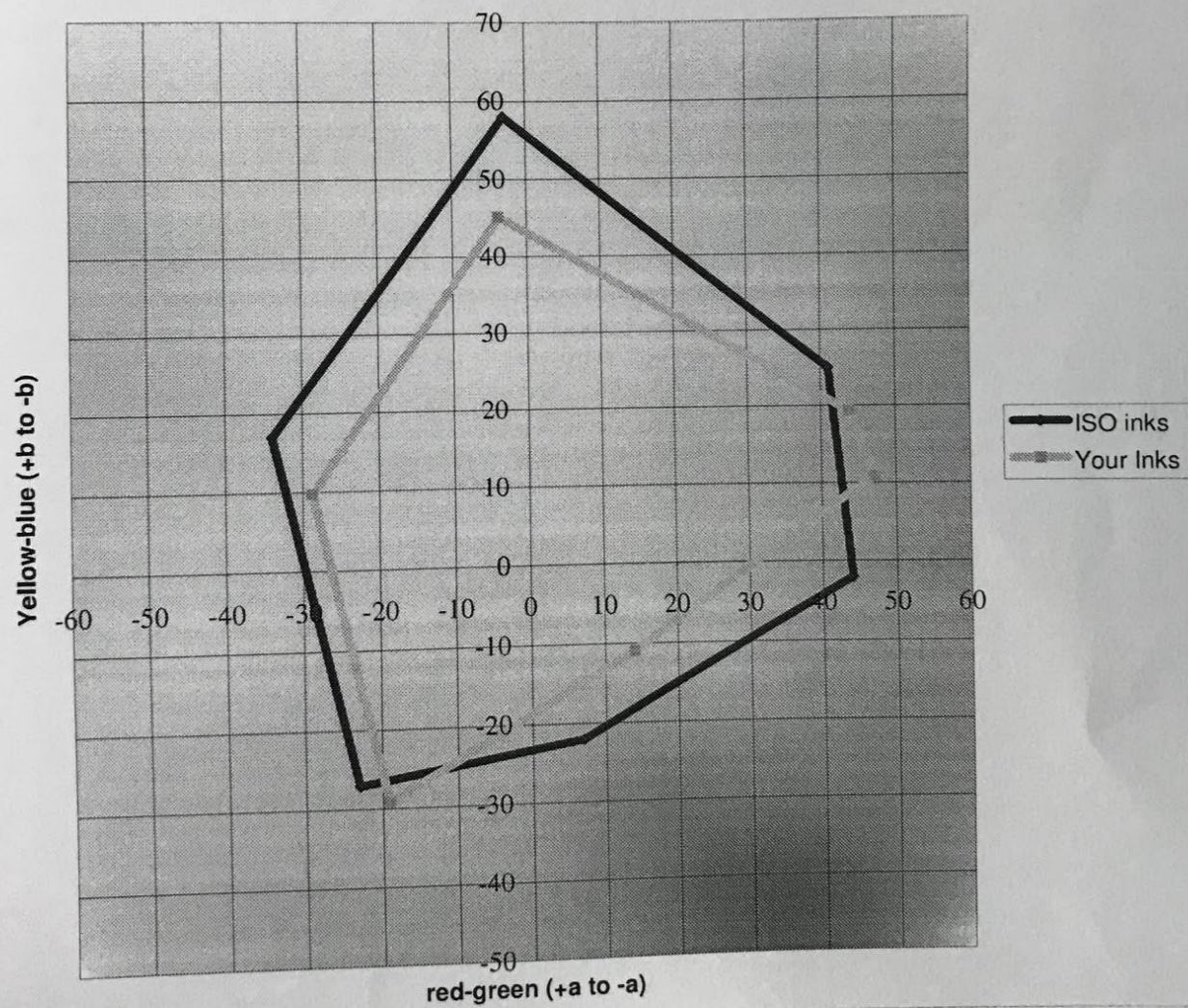
# Score for Cubiod Printing Before Vs. After



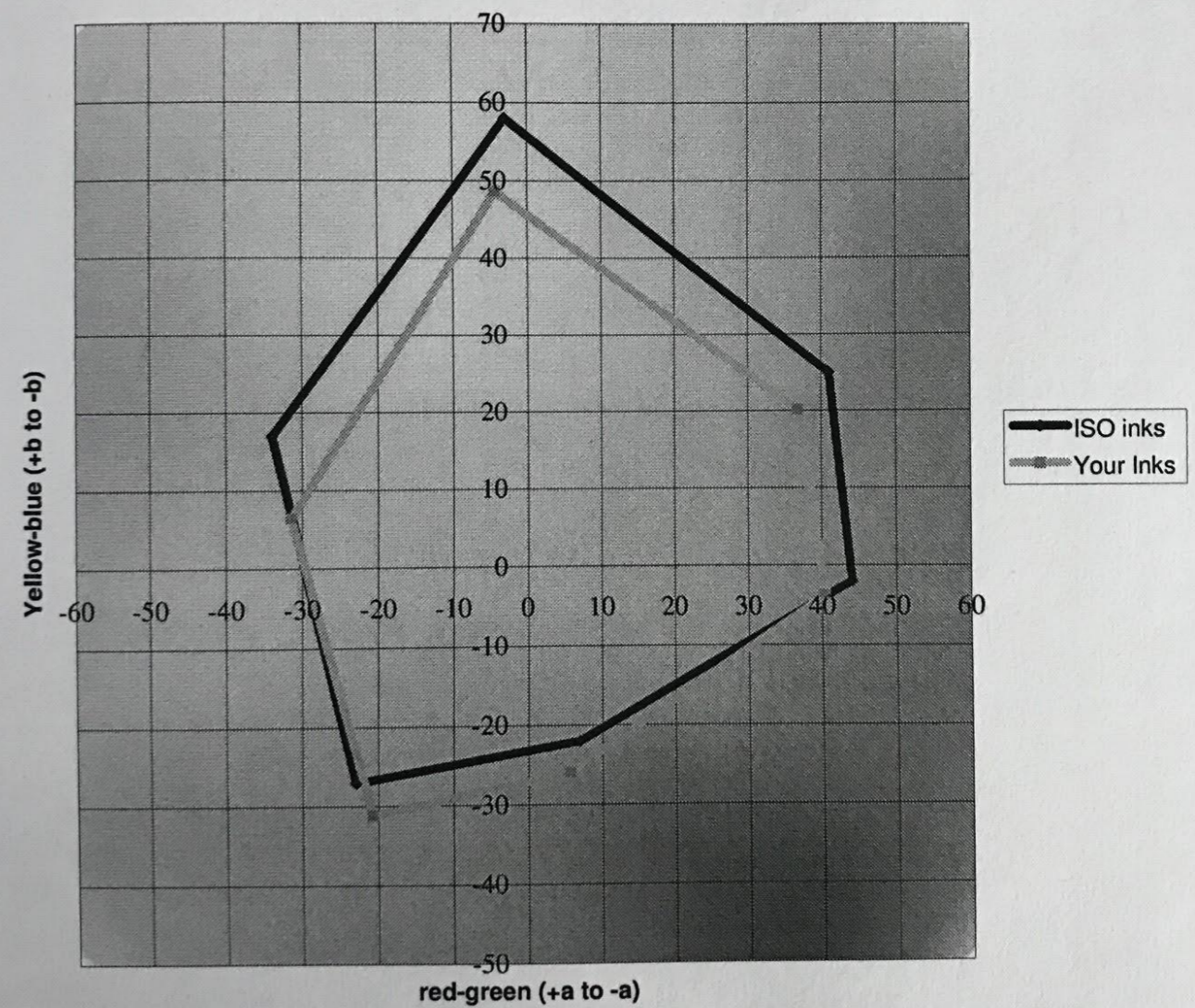


# Colour Space Before the Project

2-D plot of ISO and your colour space



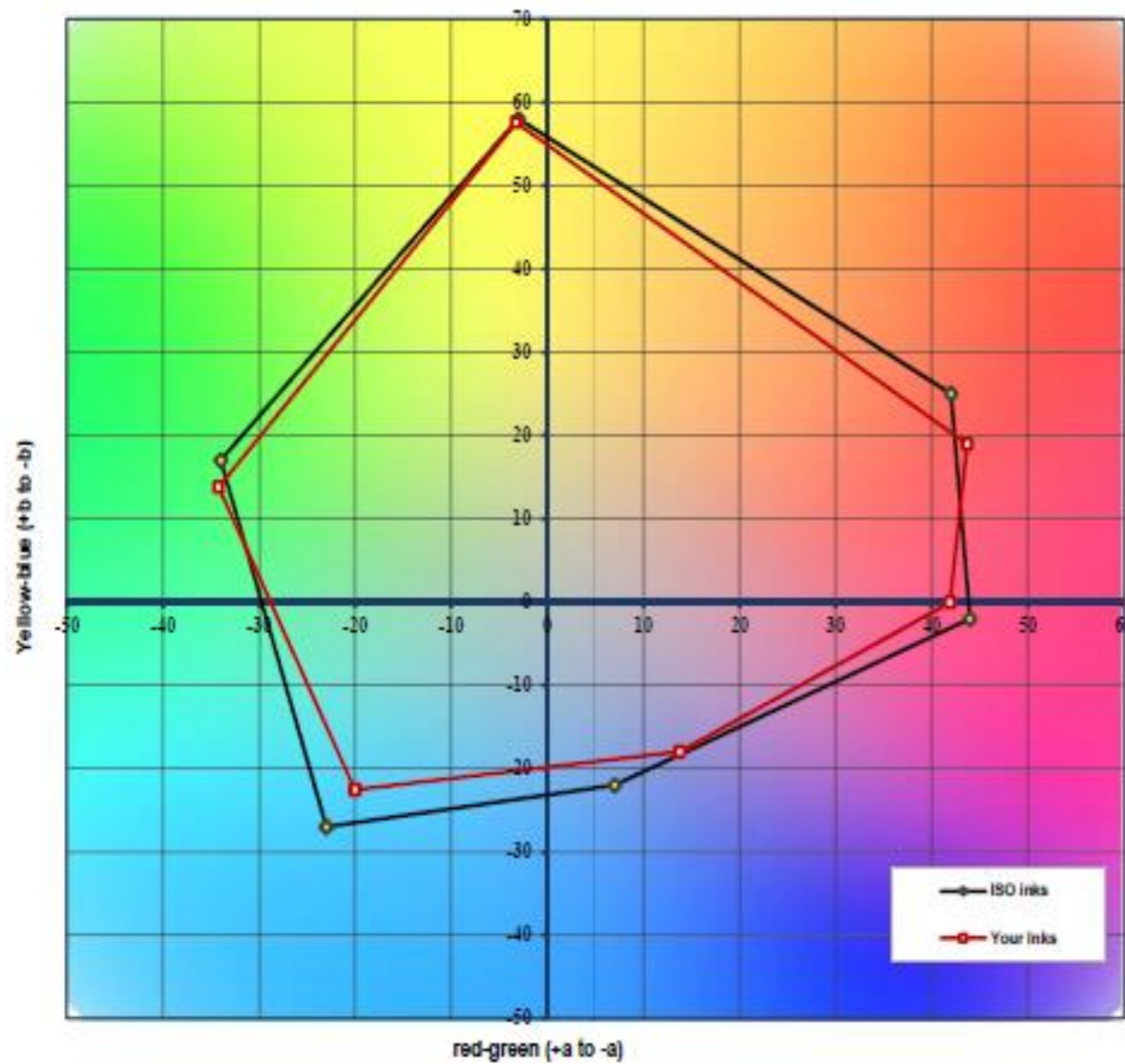
2-D plot of ISO and your colour space



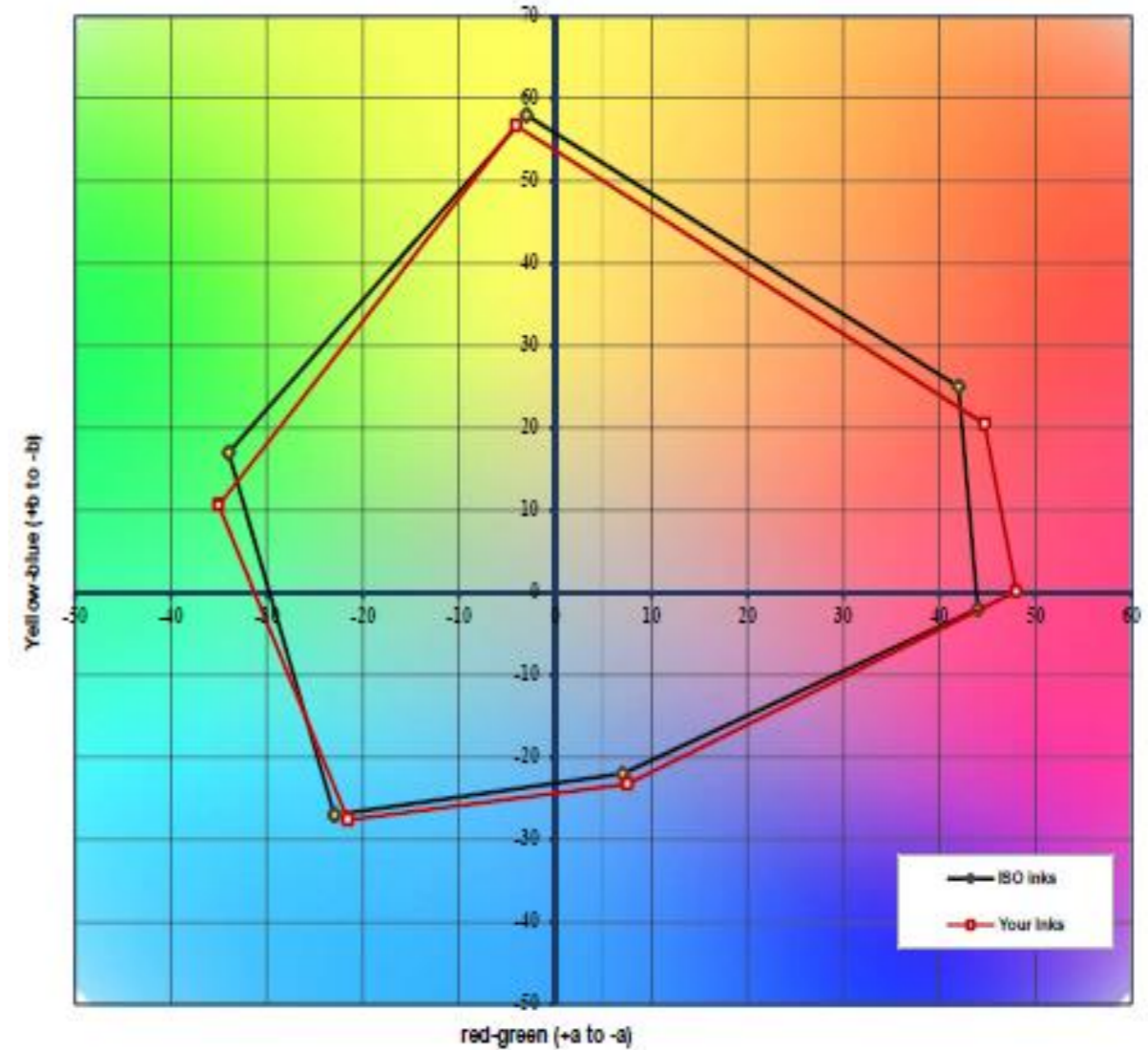


# Colour Space Improvement

2-D plot of ISO and your colour space

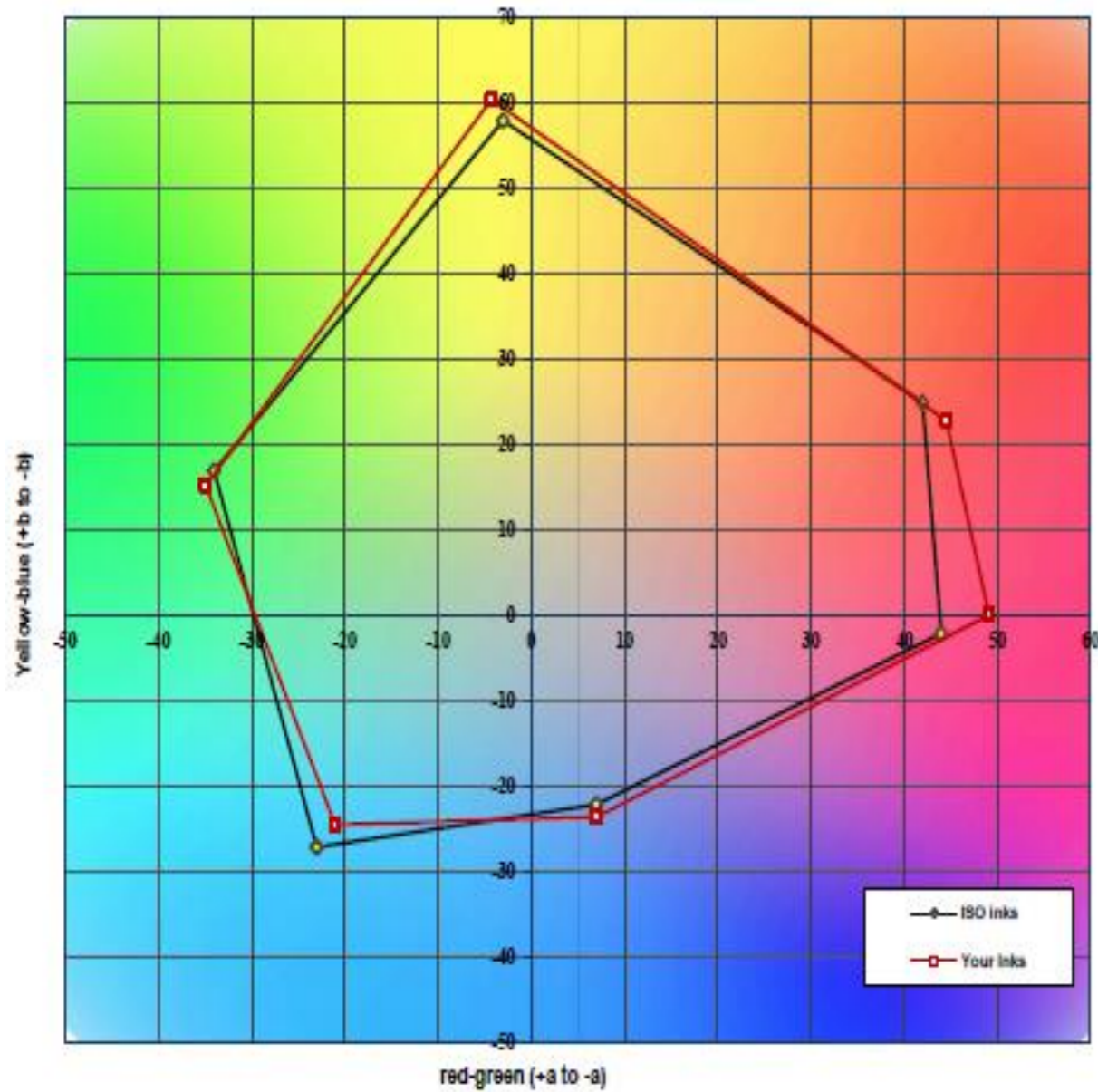


2-D plot of ISO and your colour space

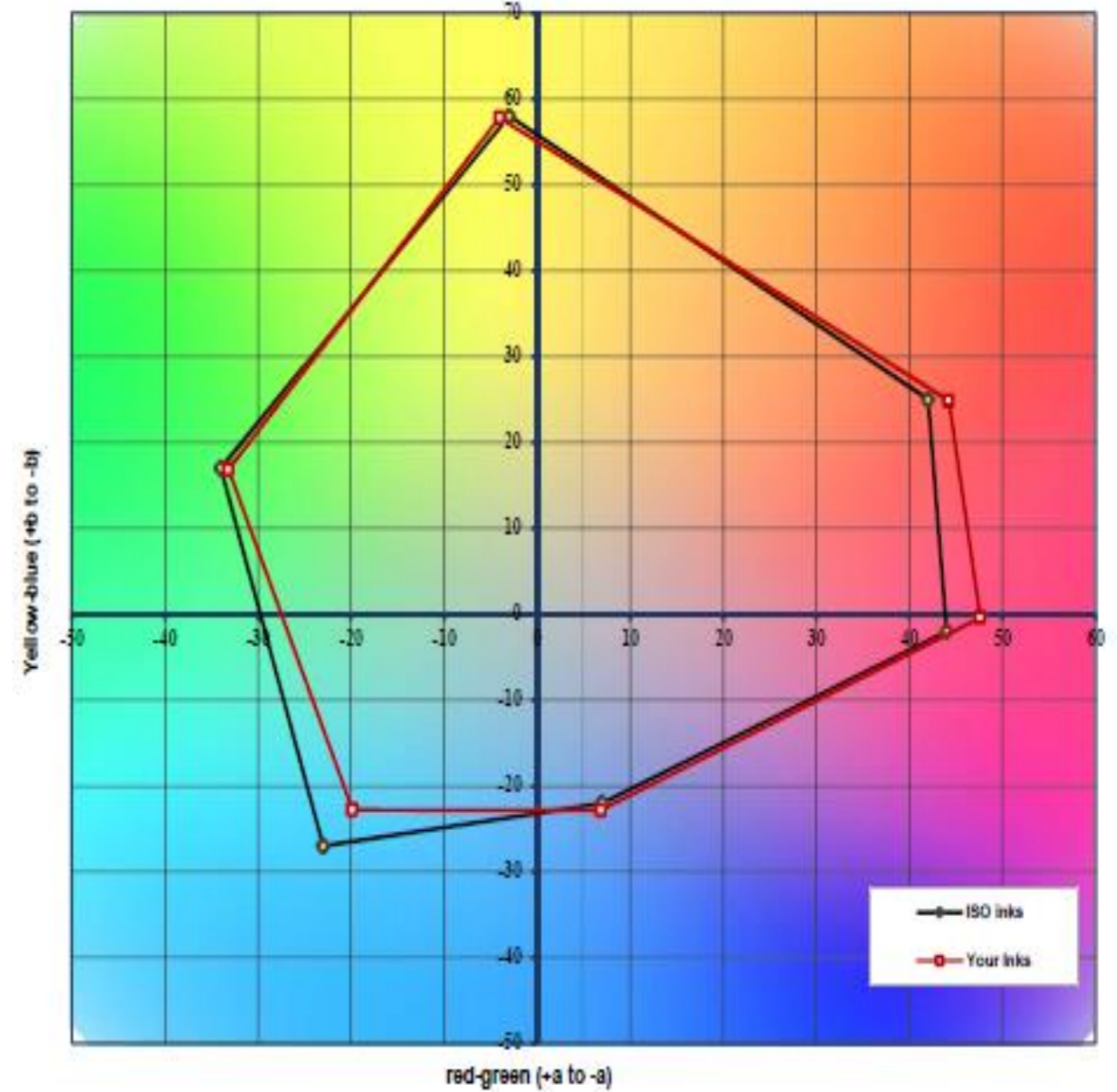


# Colour Space Improvement

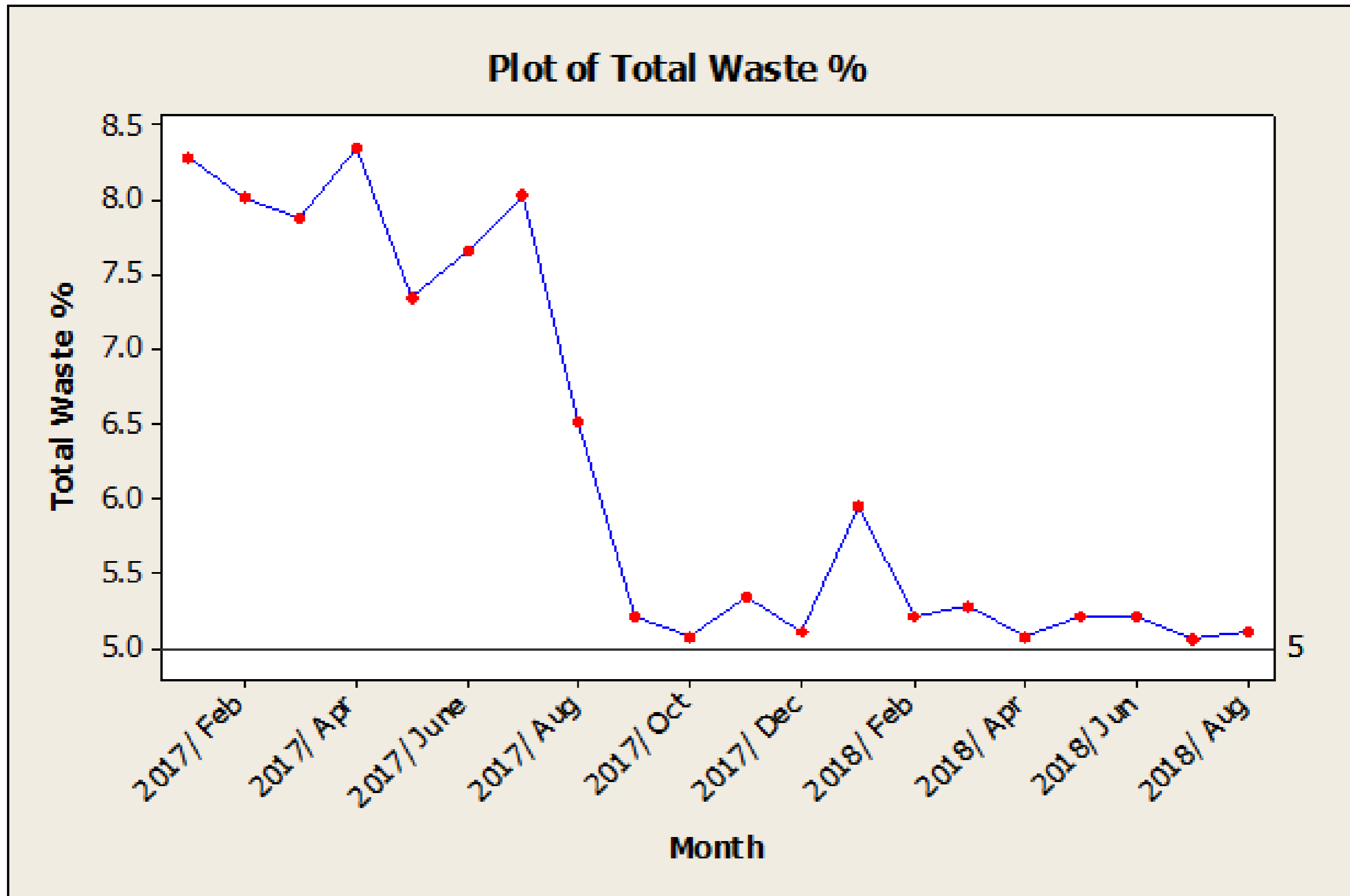
2-D plot of ISO and your colour space



2-D plot of ISO and your colour space



# Total Waste Reduction Before Vs.After





# Sustainable Practices at WNL

•1

- Cleaner Production Practice



•2

- Green Productivity Practice



•3

- Responsible Care Practice



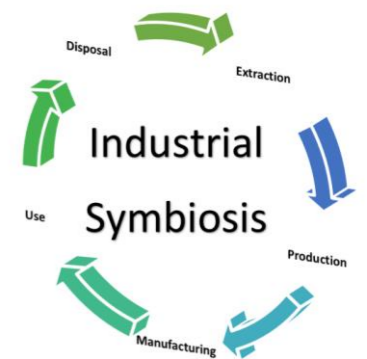
•4

- Chemical Leasing Practice



•5

- Industrial Symbiosis





# Sustainable Practices in WNL

## •6

- Carbon Footprint Calculation



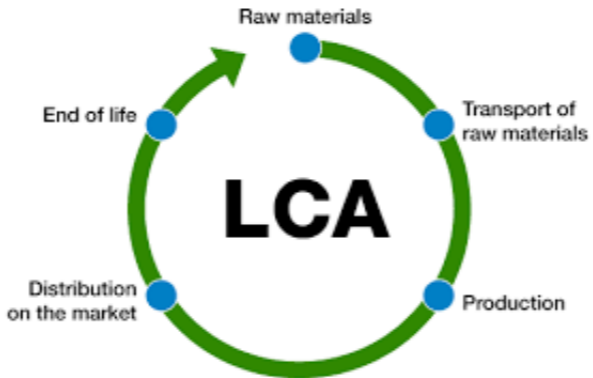
## •7

- Water Footprint Calculation



## •8

- Life Cycle Analysis



## •9

- Green Engineering Practice

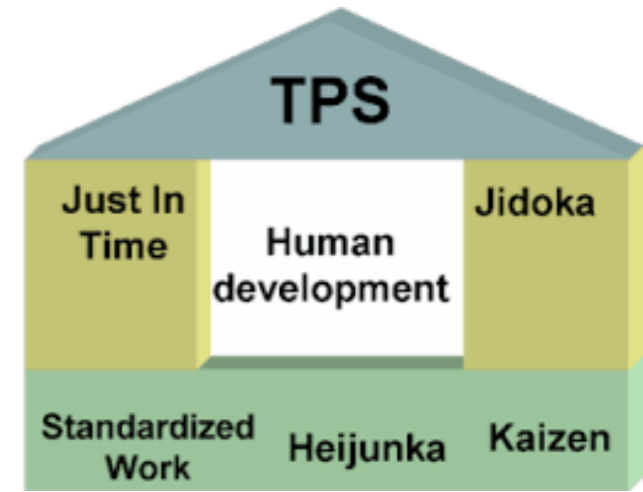


## •10

- Energy Management & Conservations



# Best Practices that we practice at WNL



改善  
KAIZEN







## International Standards for Management Practices

ISO 9001:2015

ISO 14001:2015

ISO 50001:2011

ISO 12647-3:2013

ISO 45001- 2018



# Journey







**THANK YOU**  
for your  
**ATTENTION!**

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