

# *Challenges and Opportunities of media communication*



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Hong Kong Observatory  
5 Nov 2014

# Challenges and Opportunities of Media Communications

- Coordination
- Communication
- Social Media
- WMO Guidelines





# Coordination

- Coordination – Liaison Group
  - Regular meeting
  - Media : contacts available
  - How media obtains weather information
  - For reporters, for computers (automatic)
  - Time latency
  - Regular liaison
- Dissemination
- Communication
- Education





# Media communication

Build up partnership





# Challenges and Opportunities of Media Communications

- Coordination
- Communication
- Social Media
- WMO Guidelines



22-45 15 Sep

04:56 16 Sep

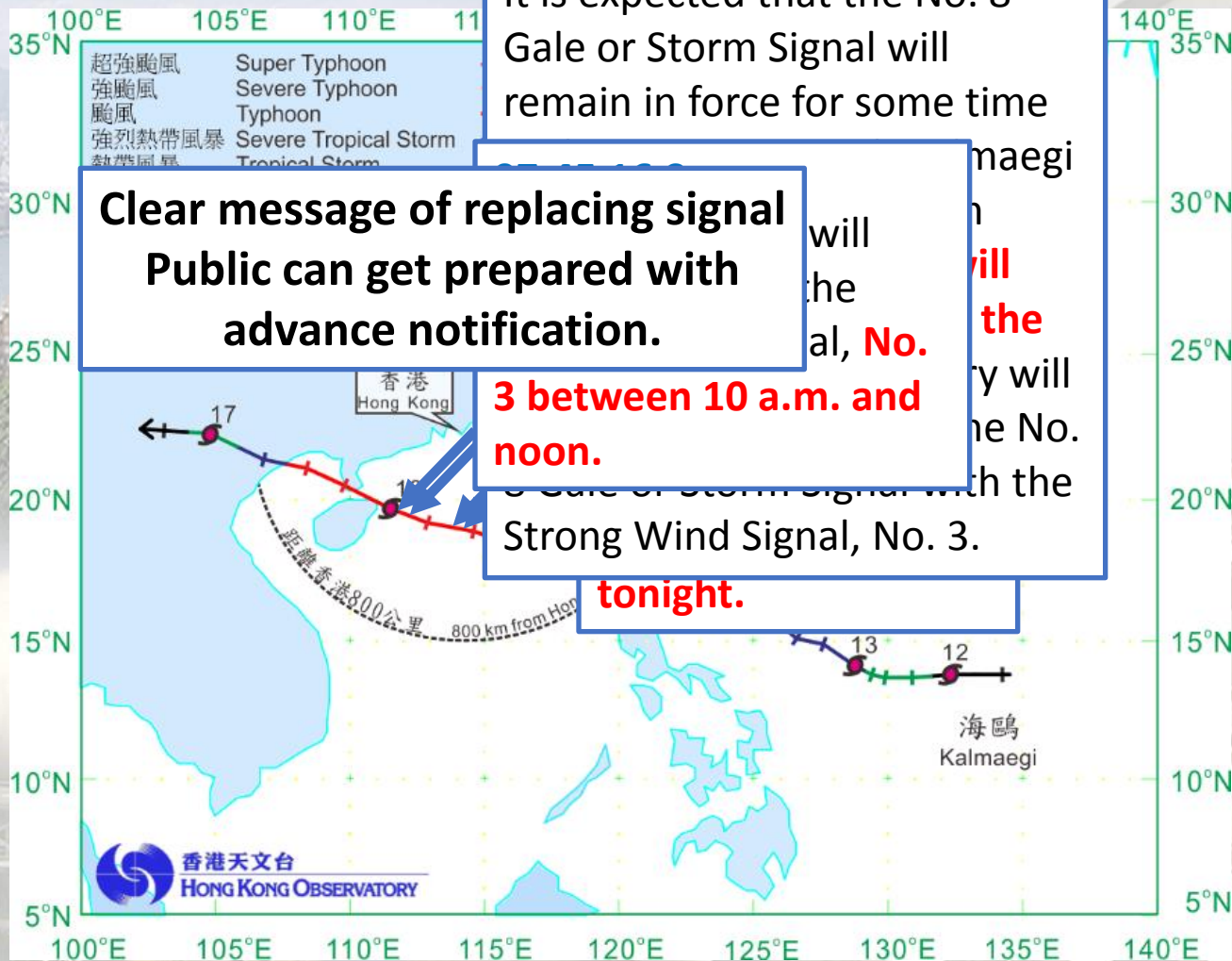
It is expected that the No. 8 Gale or Storm Signal will remain in force for some time

**Clear message of replacing signal  
Public can get prepared with  
advance notification.**

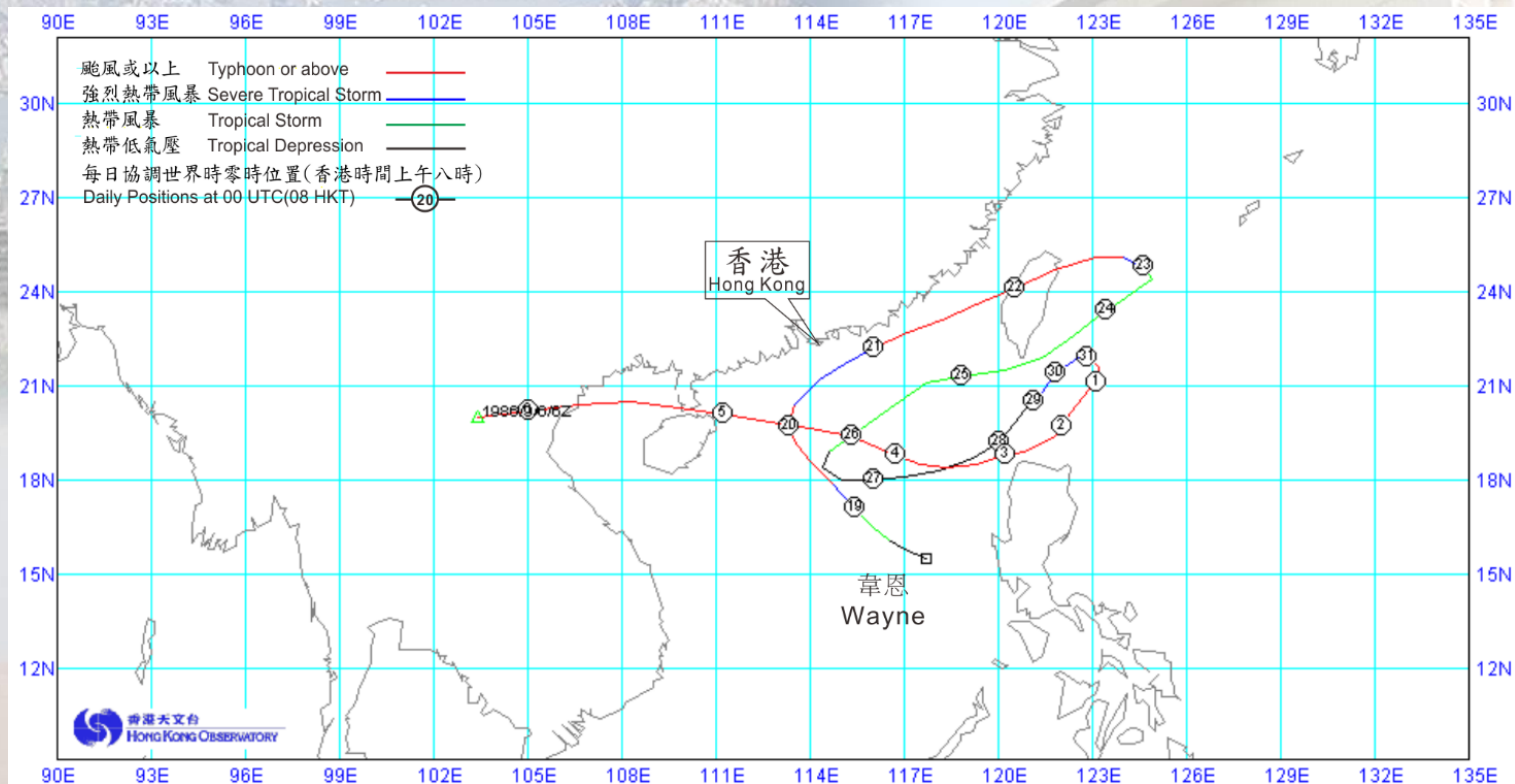
**3 between 10 a.m. and  
noon.**

Strong Wind Signal, No. 3.

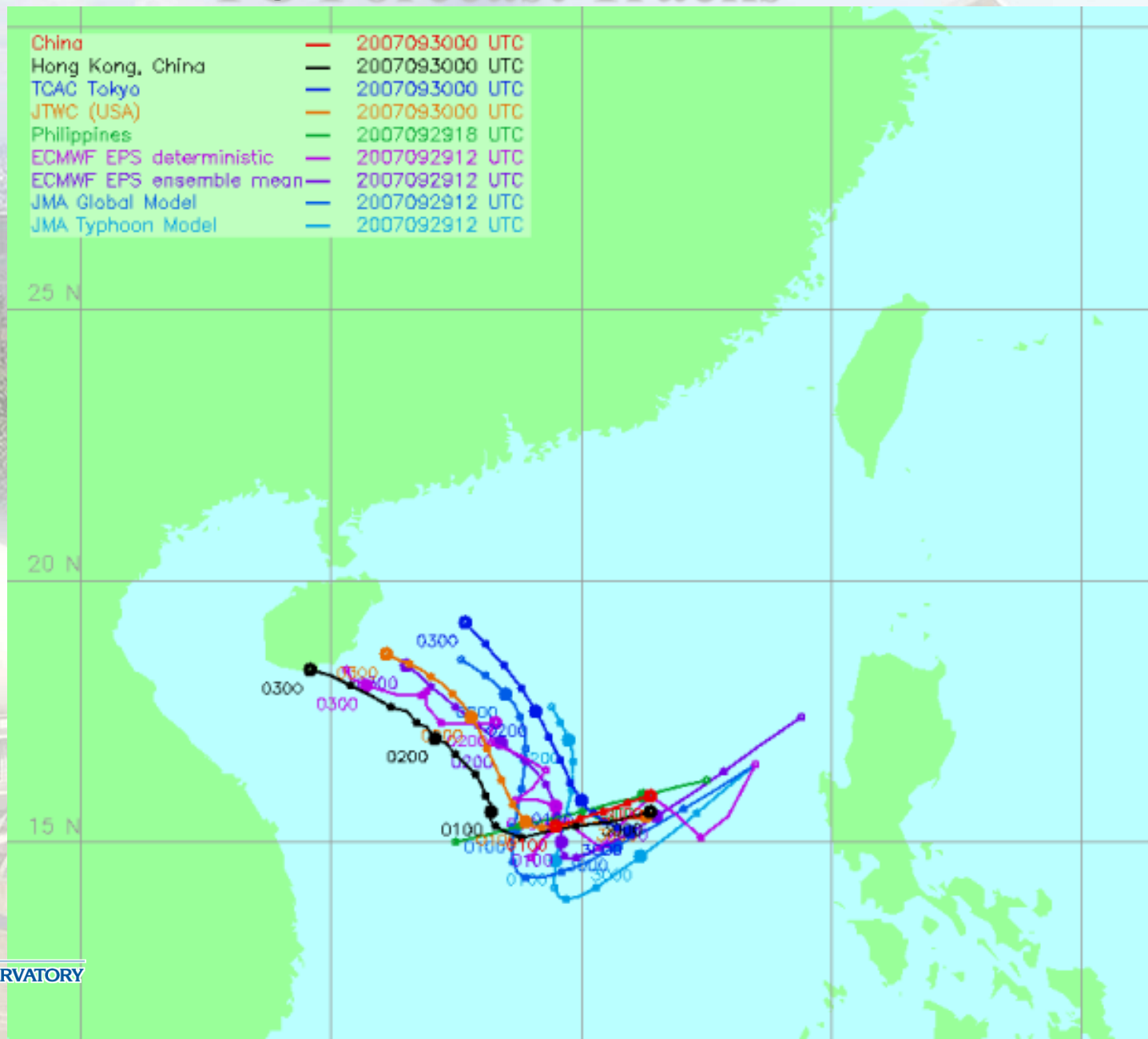
**tonight.**







# TC Forecast Tracks





# Uncertainty

*To the lay person, uncertainty implies a lack of knowledge*

*To the scientist, it can represent a lot of knowledge*

# Communications

- Common Situational Awareness
  - Forecast and Uncertainty Information
  - “Certain” of the “Uncertain”







Produced by the Public Weather Services Programme (PWSP)  
of the World Meteorological Organization (WMO)

## COMMUNICATING FORECAST UNCERTAINTY

PWS-SG 1

This summary guide is for forecasters who are required to include uncertainty information in weather and climate forecasts and want to know the best way to present it. It provides advice on communicating probability forecasts, or other kinds of uncertainty information.



### Why communicate forecast uncertainty?

**Uncertainty information helps people make better decisions:** People can make good plans and the right choices when they know the options they are facing. These plans range from simple things such as what clothes to wear, to major emergency responses such as community evacuation.

**Communicating uncertainty helps manage user expectations:** Meteorologists are routinely faced with forecast uncertainty. This can be stressful when users have an expectation that the forecast is always right. Communicating forecast uncertainty leads to a realistic understanding of the accuracy and reliability of the service.

**Communicating uncertainty promotes user confidence:** Surveys show that uncertainty information does not undermine people's confidence in the service. Instead, it reassures people that they are getting the full story, and gives them confidence that the service is being provided objectively and scientifically.

**Forecast uncertainty reflects the state of the science:** Meteorological services must be based on good science. Uncertainty is inherent in forecasts and it is appropriate that this uncertainty be incorporated into the services that are provided.

### How should forecast uncertainty be communicated?

**Tailor the information to the audience:** Different users have different requirements and varying levels of understanding. For some, detailed information can be provided, including complex graphics. They may even have in place, specific response plans that describe certain actions to be taken according to defined thresholds. Less sophisticated users will prefer simpler information.

**Understand how people interpret uncertainty:** A person's interpretation of uncertainty can be influenced by personal feelings of risk and vulnerability. Make sure that your terminology is clearly defined so that people have an accurate understanding of the uncertainty involved.

**Use colour wisely:** Colour can be a powerful way to communicate meaning. Save the strongest colours for when they are needed. For example, use red only when there is a strong likelihood of a high-impact event.

### Examples of uncertainty information

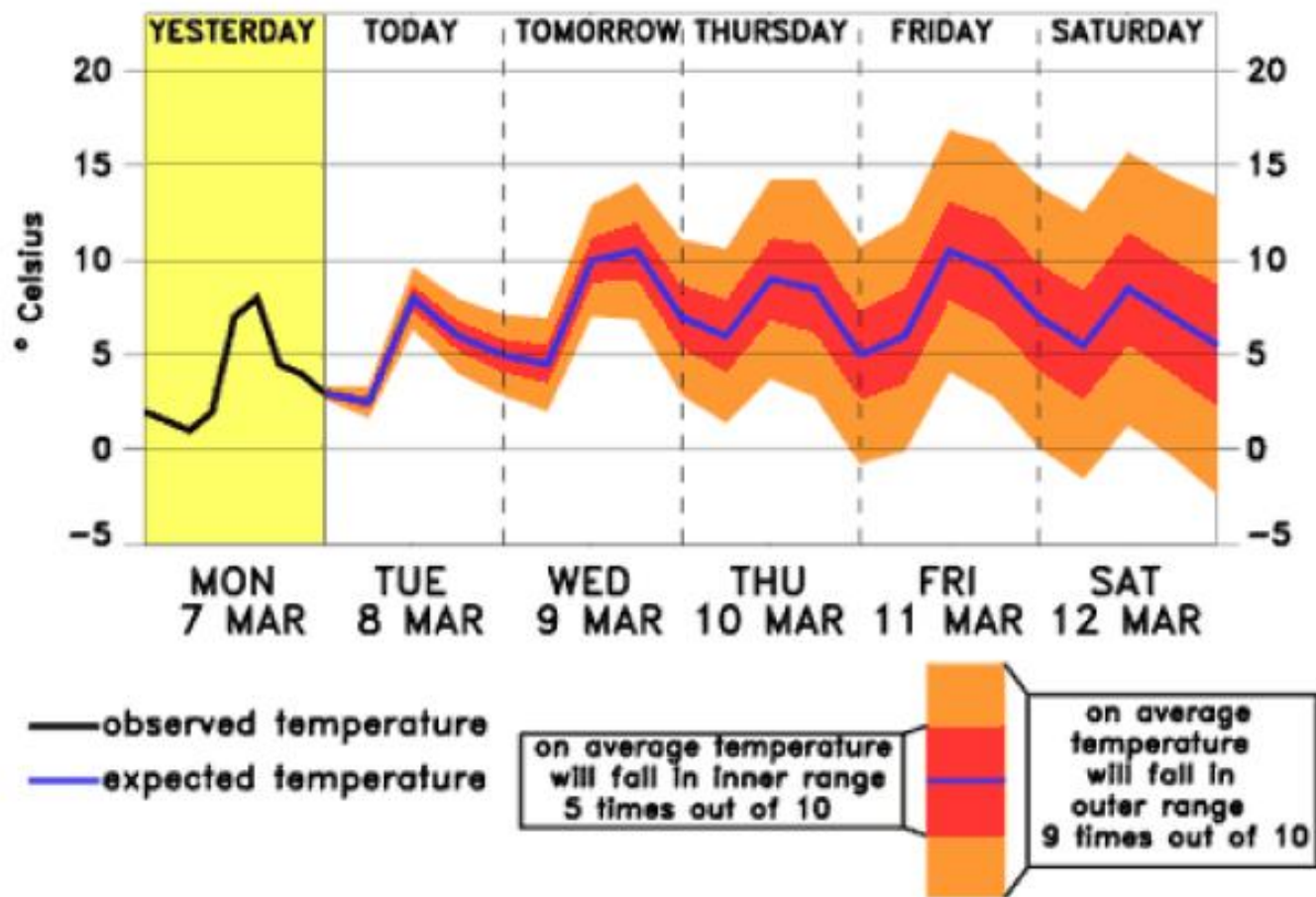
Uncertainty information can be presented in all sorts of ways – simple plain language such as “chance of” and “possible”; numerically using indices and probabilities; descriptions of alternative scenarios, pictorially using icons, graphs and charts.

## Existing resources

### WMO Guidelines on Communicating Forecast Uncertainty (WMO/TD No. 1422)

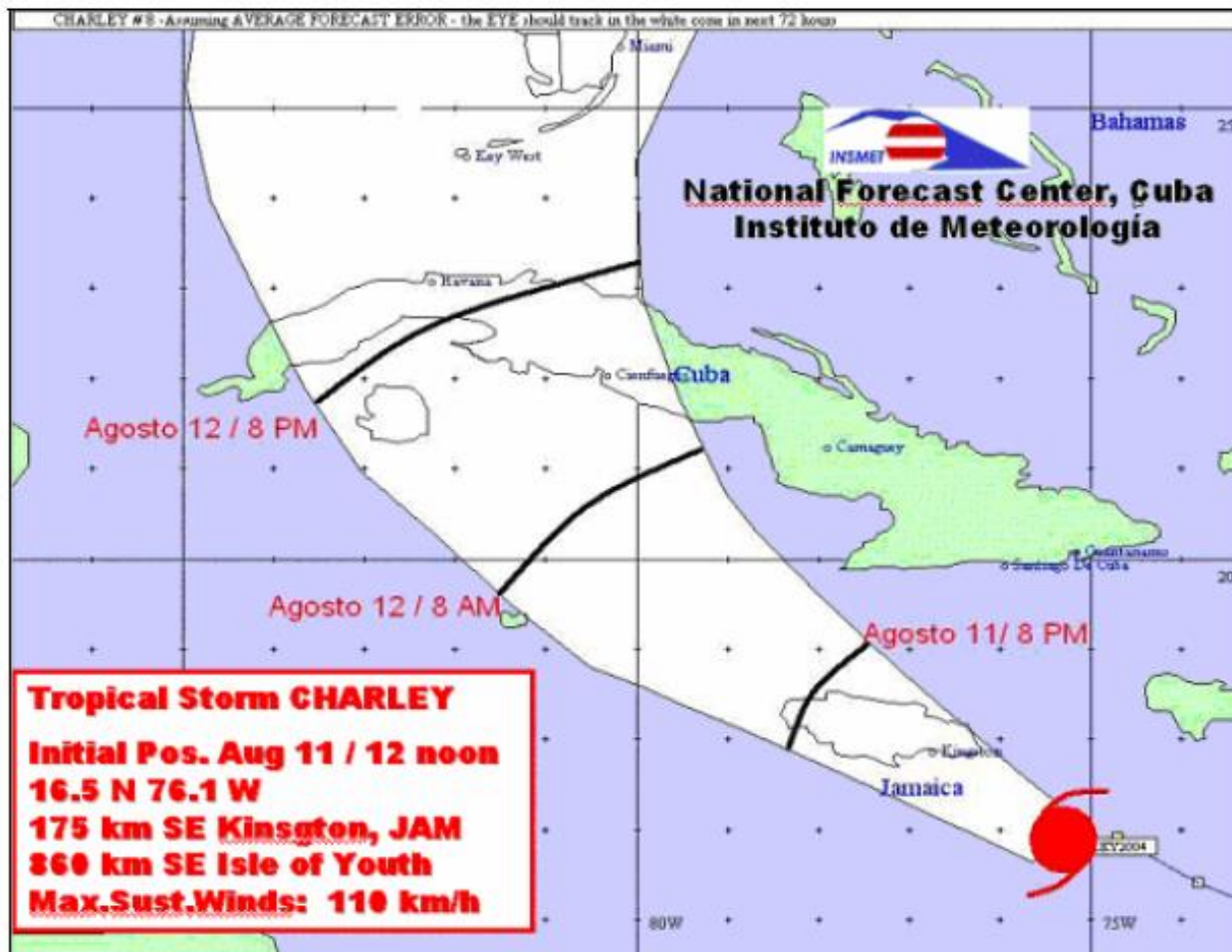
[www.wmo.int/pages/prog/amp/pwsp/documents/TD-1422.pdf](http://www.wmo.int/pages/prog/amp/pwsp/documents/TD-1422.pdf)

# Communicating Uncertainty

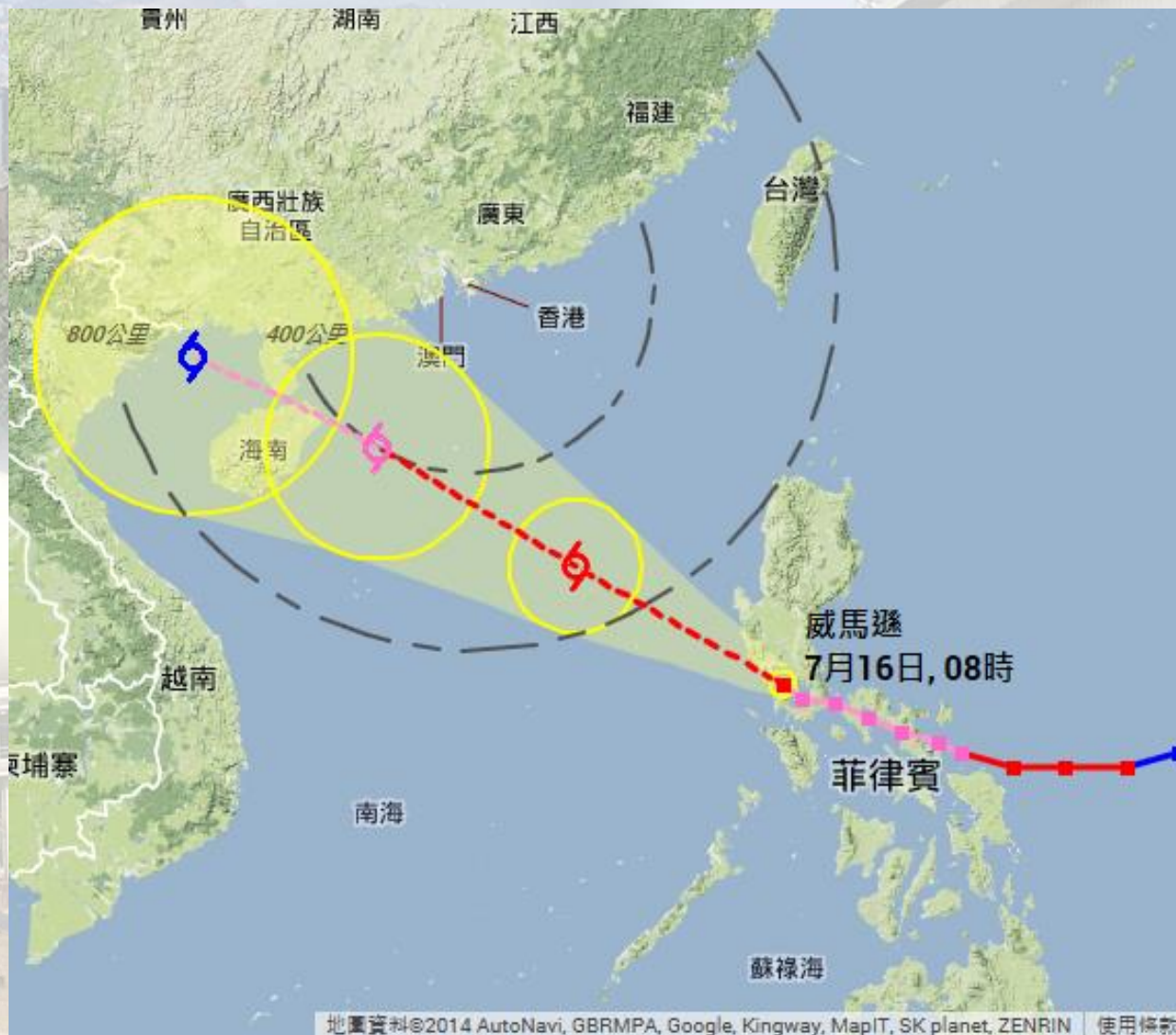




# Communicating Uncertainty

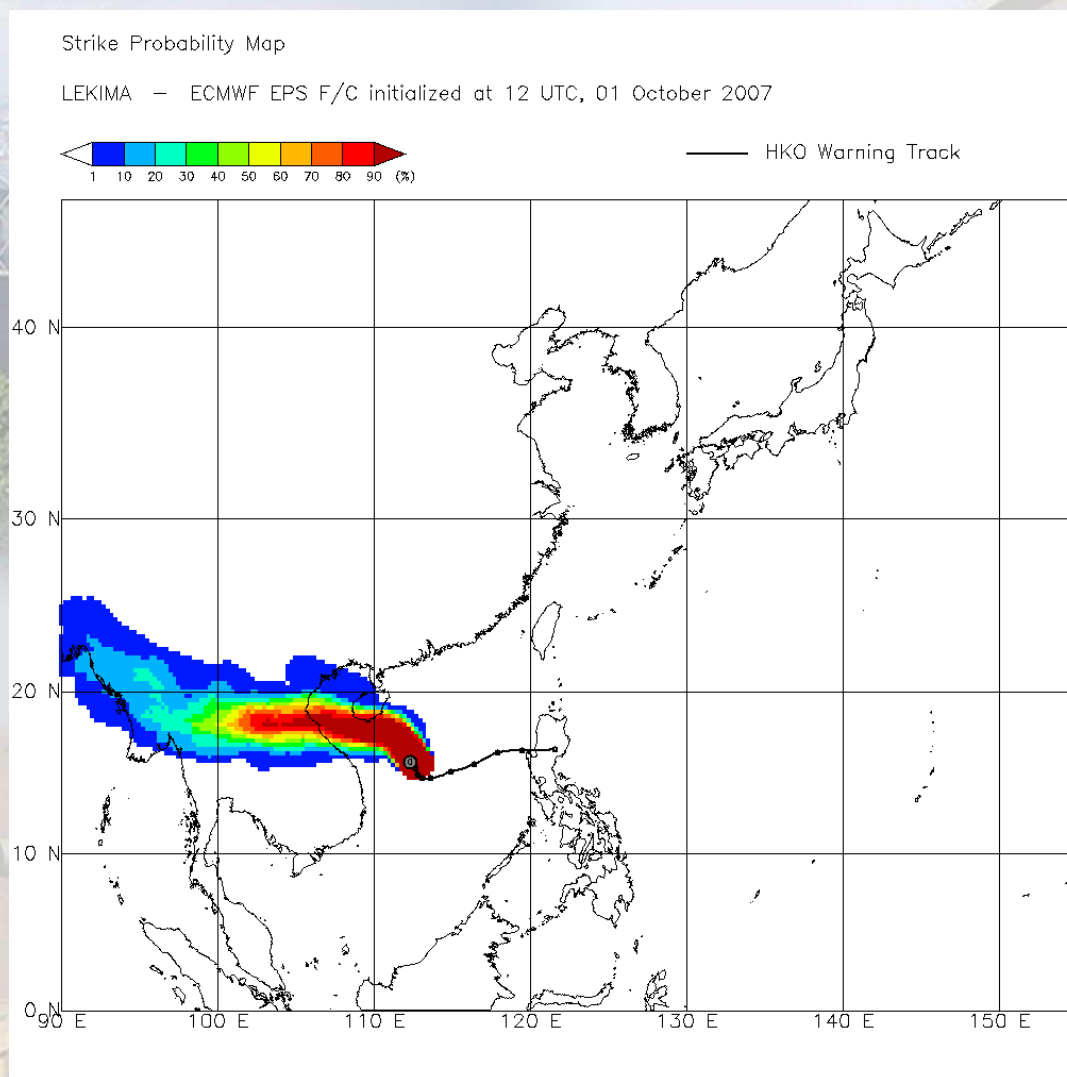


# Use map to illustrate uncertainty





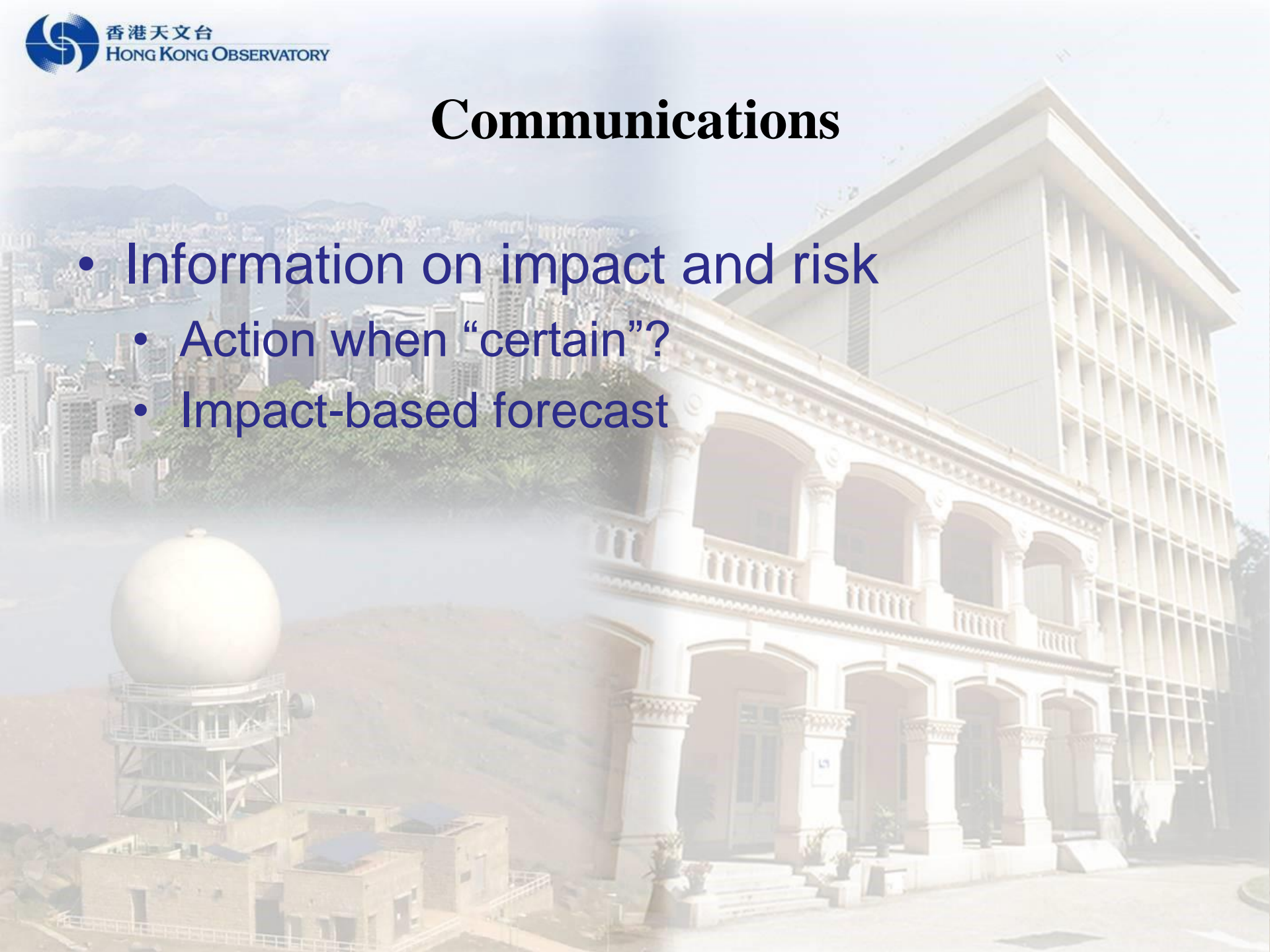
# TC Forecast Tracks



Use map to illustrate uncertainty

# Communications

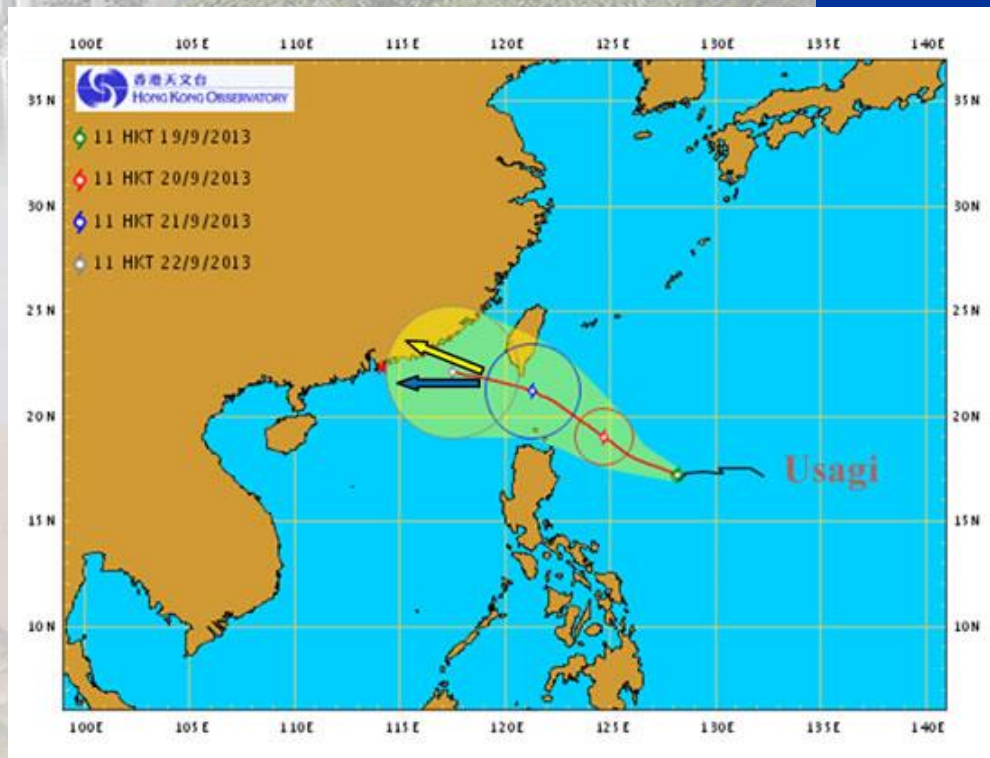
- Information on impact and risk
  - Action when “certain”?
  - Impact-based forecast





# Before Super T Usagi arrives

- HKO blog
- An uninvited guest during mid-autumn festival holiday



Thursday, 19th September 2013



## An uninvited guest during mid-autumn festival holiday

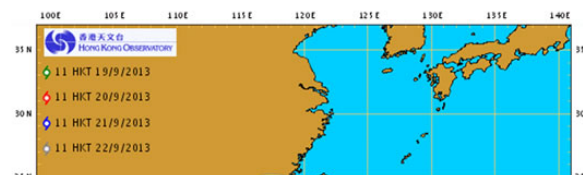
Today (19 September) is the Mid-Autumn Festival. It is followed by a long holiday. Guess you have planned to celebrate the holiday. While it will be cloudy tonight, there will be breaks in between clouds, allowing us to have glimpses of the moon while celebrating with family and friends.

You may also be aware that there is a tropical cyclone to the east of the Philippines, named Usagi. Although she is still quite far away from Hong Kong, according to the present forecast track, she is expected to cross the Luzon Strait over the weekend and approach the coast of Guangdong this Sunday (Figure 1). We expect the weather in Hong Kong to deteriorate significantly on Sunday, with high winds and seas as well as squally showers. You are advised to stay on the alert. The change in weather may affect your plan in the long holiday.

From past record, those tropical cyclones approaching the coast of Guangdong from the east via the Luzon Strait would pose a threat to Hong Kong. We should remain vigilant. Anyhow, there may still be changes to the track of Usagi. A small change in the forecast track of Usagi (yellow and blue arrows in Figure 1) may result in vastly different effects on Hong Kong's weather. For instance, if Usagi adopts a slightly northerly track (yellow arrow) and makes landfall to the east of Hong Kong, Usagi will weaken on her way to Hong Kong. We will be affected by northerly winds for a while. Due to terrain effect, the wind strength over Hong Kong will be relatively lower. In case Usagi takes a slightly southerly track (blue arrow), she will not weaken significantly on her way to Hong Kong. We will also be more prone to the effect of [storm surge](#). As it is near the Mid-Autumn Festival, tide level is already on the high side. If storm surge does materialize, the aggregate effect of high tide and storm surge may cause flooding to low-lying areas. Anyhow, the approach of Usagi from the east will cause significant change in weather to Hong Kong this Sunday. Let's better prepare for the uninvited visit of Usagi.

Wish everyone a happy Mid-Autumn Festival!

CM Cheng



2013年9月

超強颱風  
Super Typhoon

天兔 Usagi

Storm surge pushed to shore

No significant storm surge





105E

110E

115E

120E

125E

# 2013 年 9 月 **超強颱風** 天兔 *Usagi*

Super Typhoon



105E

110E

115E

120E

125E

# 2013 年 9 月 超強颱風 天兔 Usagi

Super Typhoon

天兔 Usagi

Scenario of green track (200 km from actual)

Usagi actual track (black)

Storm surge at HK





# Risk management

Probability	Impact	Risk	Action
High	V. High	High	Yes
Medium	V. High	High	Action
<50%	V. High	Medium High	Action?
<50%	High	Medium	Action??

## Landfall to the East of Hong Kong

Probability	Impact	Risk	Action
V. High	Low	Medium High	Yes

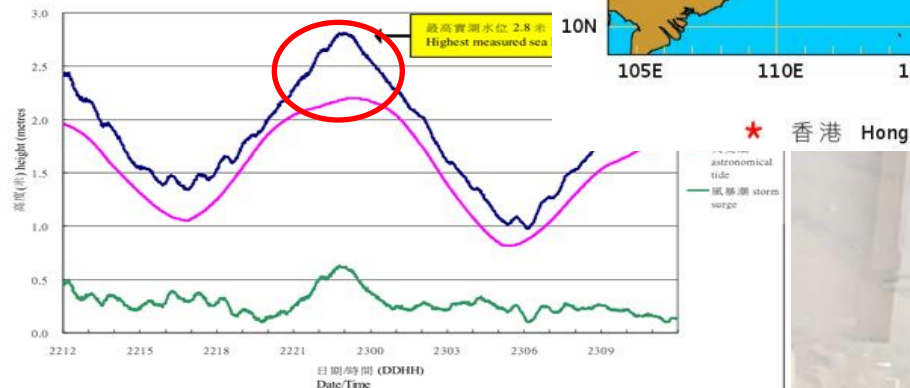
## Landfall to the West of Hong Kong

Probability	Impact	Risk	Action
Low	V. High	Medium High	Yes

# Visualize

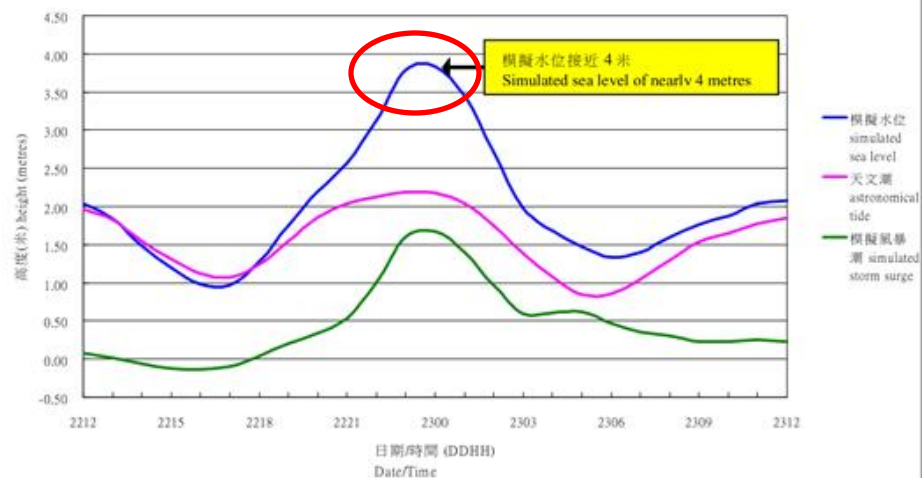
- A narrow escape from repeating history

Actual 2.8 m (eastward track)



Storm surge during S.T. Hagipit in 2008

If adopts southward track : ~4 m





# Press coverage before arrival

## WEATHER

### HK prepares for strongest typhoon of the year

.....  
**Ada Lee, Mandy Zuo and  
Agence France-Presse**

Hong Kong should brace itself for what was likely to be this year's strongest typhoon, the Observatory warned yesterday as Super Typhoon Usagi closed in.

It issued a very hot weather warning yesterday, and the heat and haze is likely to continue today. Heavy squally showers, strong winds and rough seas were expected tomorrow and on Monday, with Usagi forecast to be closest to the city tomorrow night, it said.

At 11pm yesterday, Usagi was located 680km north-northeast of Manila, with wind speeds of 205km/h near the centre. It was forecast to pass between Taiwan and the Philippines before reaching the southern Chinese coast.



The speed in km/h of winds  
expected from Super  
Typhoon Usagi

Observatory senior scientific officer Cheng Yuen-chung said Usagi could be the strongest typhoon to affect Hong Kong this year, especially if it took a more southerly route. Assistant director Cheng Cho-ming wrote in the department's blog that low-lying areas could be flooded due to the combined effects of a storm surge and high tide.

**Boats are secured in Taipei  
before Usagi hits.** Photo: AFP

City University's Professor Johnny Chan Chung-leung said Usagi's strength could be on a par with that of 2010's Typhoon Megi, which killed 31 people in the Philippines and 36 in Taiwan. Typhoons passing between these places have a history of being stronger as they reached Hong Kong, he said.

Taiwan meteorological offi-

cials issued a maritime warning on Thursday night and a land warning yesterday morning, expecting the worst of the typhoon today. Taiwan news reported that Dutch artist Florentijn Hofman's *Rubber Duck*, which debuted in Kaohsiung on Thursday, was deflated yesterday.

Provinces including Guangdong and Fujian (福建省) were prepared for strong storms, with transport and maritime departments suspending their Mid-Autumn Festival holiday, the Ministry of Transport said.

Both Cathay Pacific and Dragonair last night advised passengers departing tomorrow and Monday to postpone non-essential travel due to the likelihood of delays at Hong Kong airport. Rebooking fees will be waived for flights scheduled between tomorrow and Tuesday.



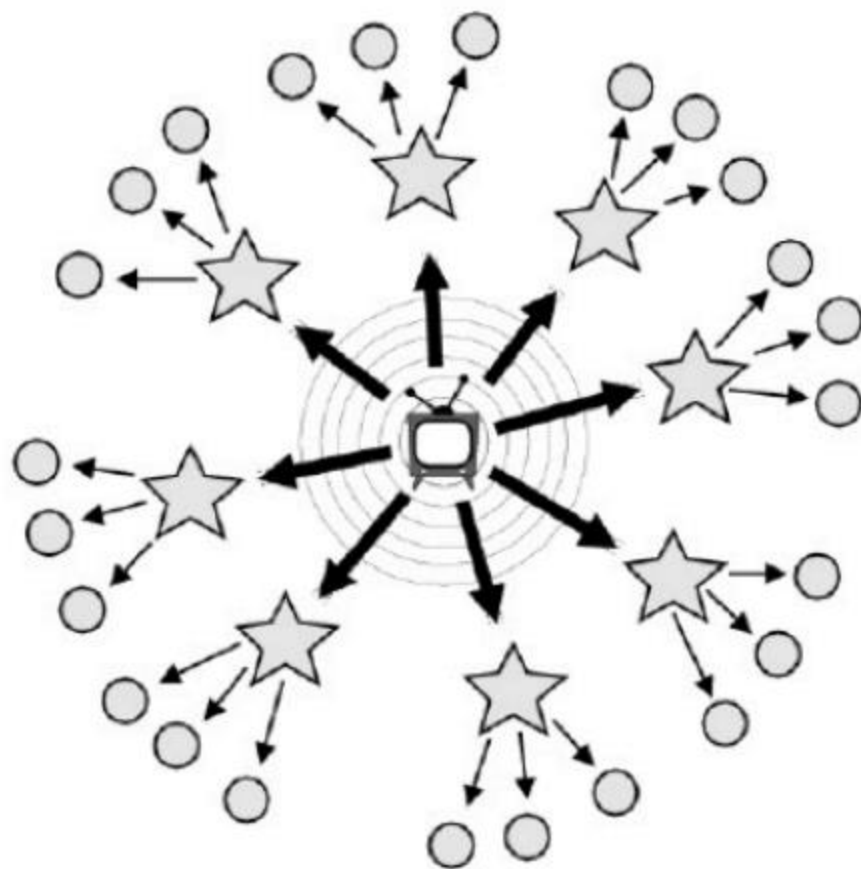
# Challenges and Opportunities of Media Communications

- Coordination
- Communication
- Social Media
- WMO Guidelines





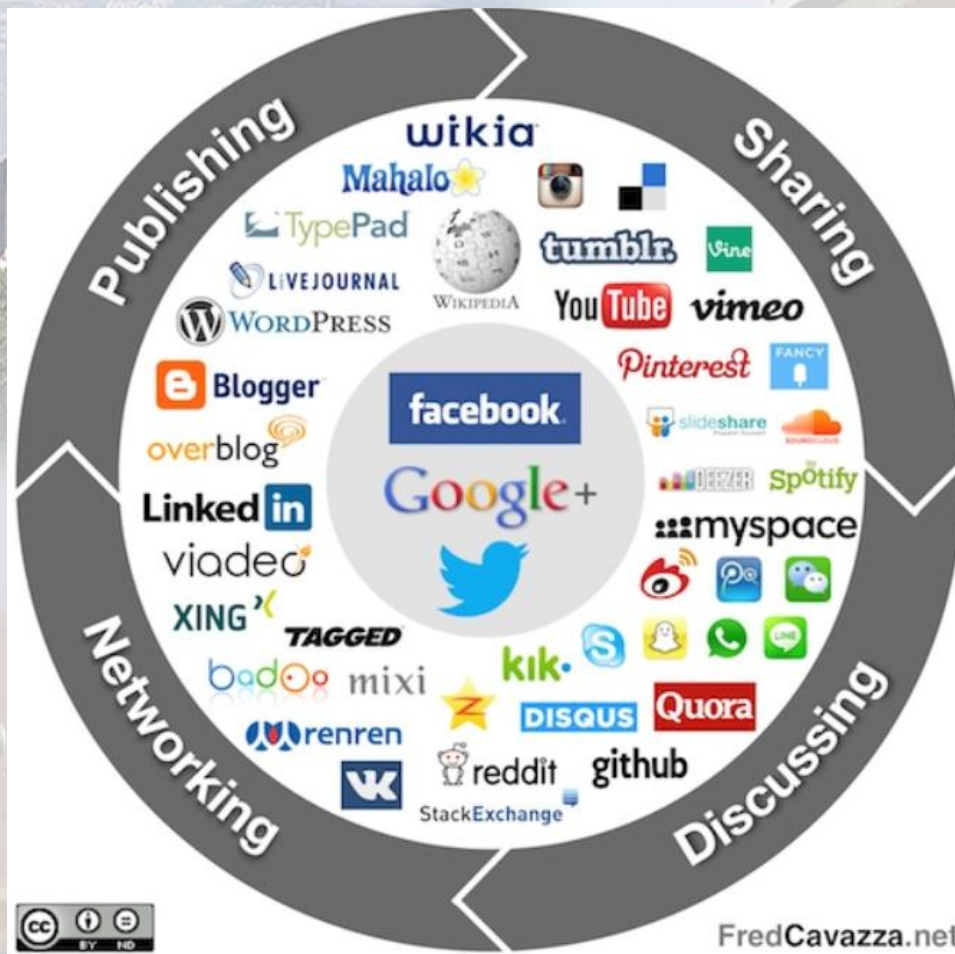
# The Old Broadcast Model



**Broadcasters and advertisers  
decide what is popular...**

Source: Jonah Peretti's LA Breakfast Deck <http://tinyurl.com/ViralContent13>

# Emerging of Social Media





# Communication

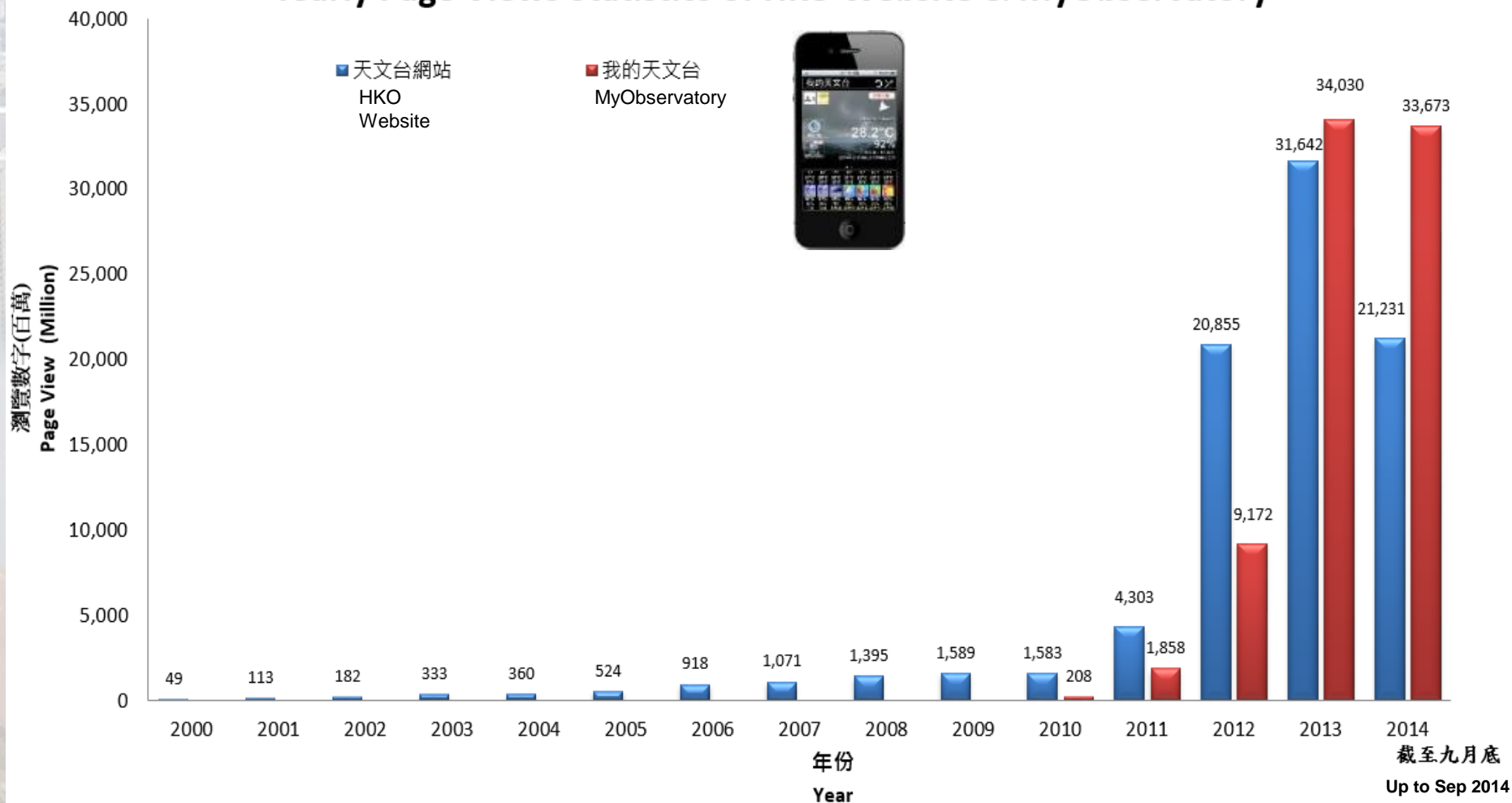
## Social Media



Popularity of smart mobile phones

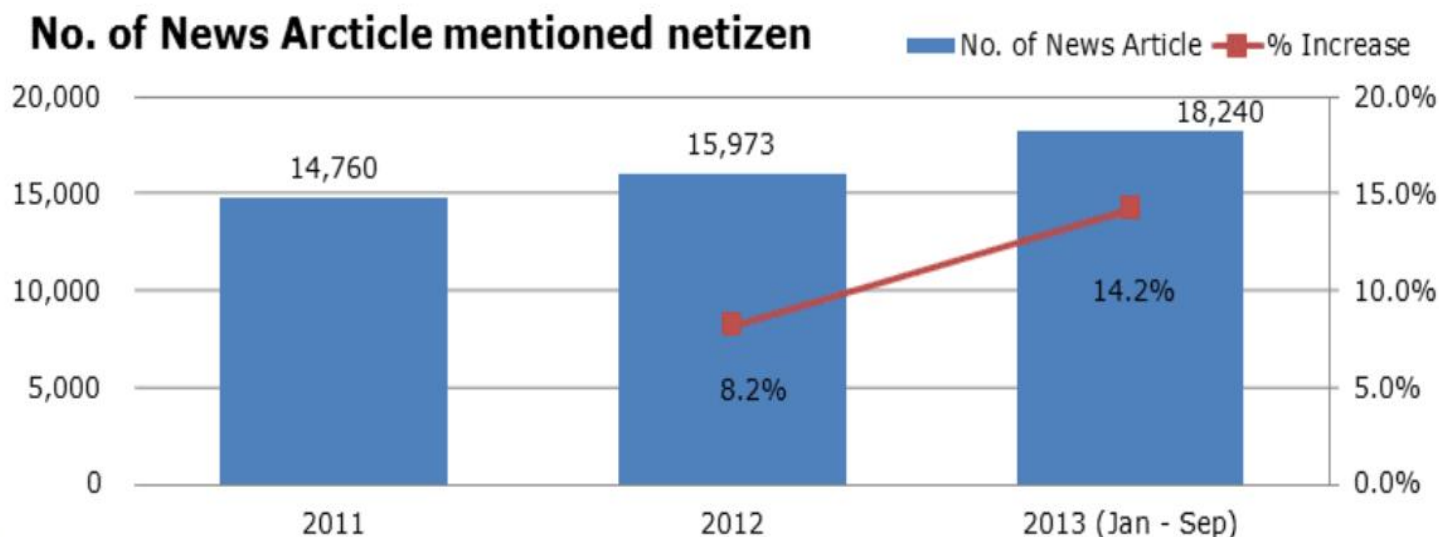
## 天文台網站及「我的天文台」瀏覽數字

### Yearly Page Views Statistics of HKO Website & MyObservatory





# Netizen shapes public opinion in HK



Source: K-Matrix

即時新聞 2013年10月28日 請選擇 網民玩大咗 造謠九巴執笠 警介入調查

【網民hot talk】雙非媽媽「公義論」  
中港網民都唔like

Facebook 210

建立時間: 1028 06:46

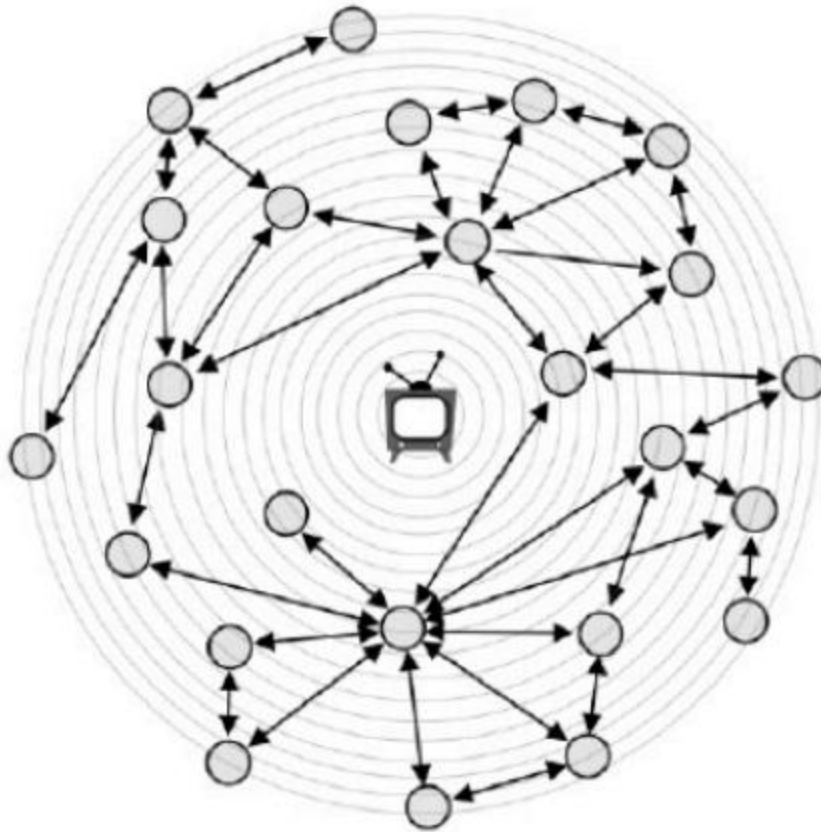


京別墅比堅尼派對 惹淫亂遐想

隨時隨地上網搵樓唔洗周圍

【本報綜合報道】有網民近日發布一批照片，稱在十一長假期間，參加了在北京五環外一個豪華別墅內的派對，派對上各式各樣的美女雲集，更有不少「土豪」在場內穿梭，相中所見，現場布置奢華，更有美酒佳餚供賓客享用，大批統一身穿白色比堅尼的性感美女充斥場

# The New Networked Model



Everyone can be the **reporter** and **broadcaster**

Source: Jonah Peretti's LA Breakfast Deck <http://tinyurl.com/ViralContent13>



# HKO Evolution



Using Radio to deliver Weather  
Forecast and warnings

1928



HKO Internet Website

1996



HKO@Twitter

Blog

2009

2008

HKO@YouTube



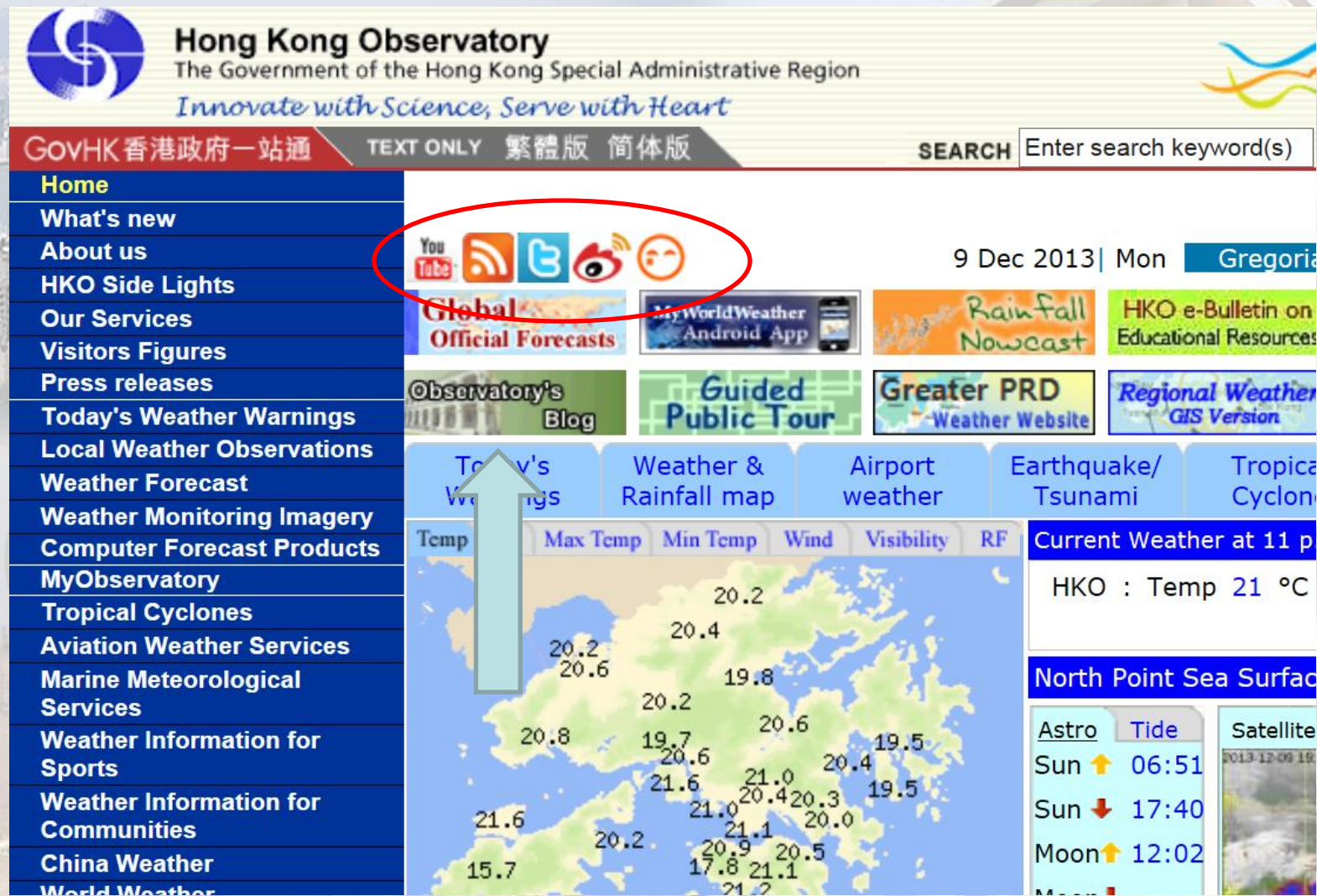
Dial-A-Weather System

1985



2010

# Observatory's Blog



**Hong Kong Observatory**  
The Government of the Hong Kong Special Administrative Region  
*Innovate with Science, Serve with Heart*

GovHK 香港政府一站通 TEXT ONLY 繁體版 简体版 SEARCH Enter search keyword(s)

Home  
What's new  
About us  
HKO Side Lights  
Our Services  
Visitors Figures  
Press releases  
Today's Weather Warnings  
Local Weather Observations  
Weather Forecast  
Weather Monitoring Imagery  
Computer Forecast Products  
MyObservatory  
Tropical Cyclones  
Aviation Weather Services  
Marine Meteorological Services  
Weather Information for Sports  
Weather Information for Communities  
China Weather  
World Weather

9 Dec 2013 | Mon Gregoria

Global Official Forecasts My World Weather Android App Rain Fall Nowcast HKO e-Bulletin on Educational Resources

Observatory's Blog Guided Public Tour Greater PRD Weather Website Regional Weather GIS Version

Today's Warnings Weather & Rainfall map Airport weather Earthquake/ Tsunami Tropical Cyclone

Temp Max Temp Min Temp Wind Visibility RF

Current Weather at 11 p  
HKO : Temp 21 °C

North Point Sea Surface

Astro Tide Satellite  
Sun ↑ 06:51  
Sun ↓ 17:40  
Moon ↑ 12:02

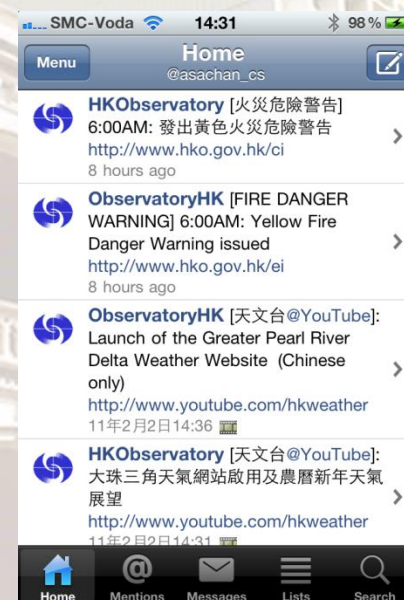


# Social Media -- Twitter

- HKO launched a new service to deliver the latest weather warnings and



HKObservatory@ Twitter Website



HKObservatory  
@iPhone Twitter App

香港天文台 H K Observatory

 訂閱

7,506

 影片 相關資訊 

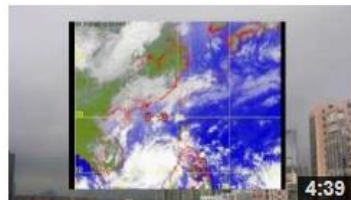


香港天文台簡介

4,554 觀看次數 1 個月前

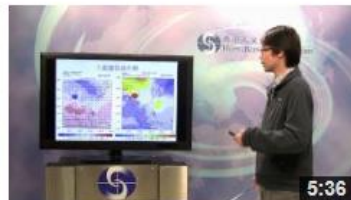
香港天文台簡介

## 最近上載的影片



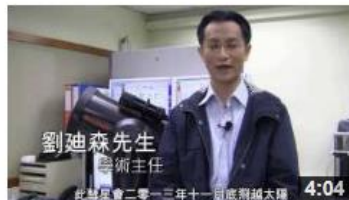
2013年11月天氣回顧

觀看次數：1,248 次 1 天前



天文台季度預報服務

觀看次數：3,192 次 5 天前



「光科網」彗星在香港天際現身

觀看次數：5,098 次 1 週前



童建低碳香港計劃的小記者訪問  
天文台台長

觀看次數：2,346 次 2 週前



2013年10月天氣回顧

觀看次數：4,108 次 3 週前



# Thematic Facebook

**Community Weather Observing Scheme (CWOS)**  
社區天氣觀測計劃  
Education

Timeline About Photos Events More ▾

PEOPLE >

1,283 likes

Invite your friends to like this Page

ABOUT >

You're welcome to post the weather photos you've taken on this page to share with others. 歡迎各位張貼你們拍攝的天氣照片至本專頁。

<http://co-win.org/>

✓ Suggest Edits

APPS >

天文觀測天氣資訊

Community Weather Observing Scheme (CWOS) 社區天氣觀測計劃 shared a link. November 2

由可觀自然教育中心暨天文館主辦，香港天文台、香港氣象學會及社區天氣資訊網絡

url.htm 下載已完成。 開啟(O)

Create Page

Recent

2014

2013

2012

Launched

Sponsored



Thematic  
Facebook  
(Partnership)

Weather  
observations



# PAGASA

Philippine Atmospheric, Geophysical &  
Astronomical Services Administration



"Tracking the sky... Helping the country."

**Dost\_pagasa**

336,504 likes · 5,395 talking about this

Like



Government Organization  
Philippine Atmospheric, Geophysical and Astronomical Services  
Administration

About – Suggest an Edit



Photos

336k

Likes



Twitter

Special Weather  
Outlook for Baran  
Special Weather Out  
for Barangay Election

Notes 1

Highlights ▾



**Dost\_pagasa**

42 minutes ago

#NCR\_PRSD 10:15 AM, Light to moderate #rains affecting portions of #Quezon, #Laguna and #Cavite which may persist for 1-2 hours.

Like · Comment · Share

2

8 people like this.

2 Friends

Like Dost\_pagasa



Invite Your Friends to Like This Page

See All

Type a friend's name...

Invite



# UK Met Office



**Met Office**  
Liked · September 25

With more #fog in the forecast for central and southern parts of the country tomorrow, find out more about what it is and how it forms at <http://bit.ly/X6uXye>

Photo credit: net\_efekt on Flickr

Like · Comment · Share

44 people like this. Top Comments

5 shares

**Andy Honess** sorry don't have the foggiest what your on about.  
Like · Reply · 1 · September 25 at 1:13am

**Nick Smith** what we had this morning was more like mist ... not low level cloud ... but because it was warm and sunny yesterday .... and the temperature plummeted overnight ... the damp air condensed as mist  
Like · Reply · September 25 at 3:14am

**Jenni Riley** I ❤️ fog 😊  
Like · Reply · September 25 at 1:20am

**Stella Good** That is what I was taught at School !  
Like · Reply · September 25 at 12:47am via mobile

**Will Snell** isnt fog just low level cloud?  
Like · Reply · September 25 at 12:27am



# Social Media

- Strengths
  - Reach
  - Multi-media
  - Always available
  - Quick, though uncertain distribution
- Weaknesses
  - Credibility
  - Authority



Hail event on 30 Mar 2014



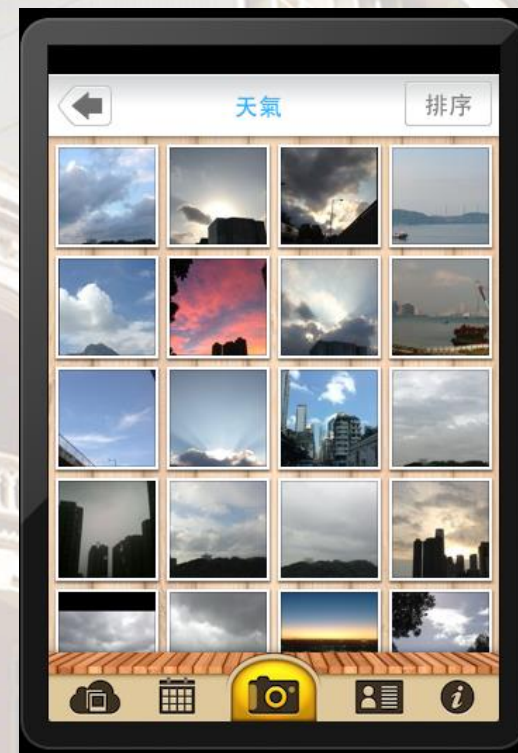
# Rumours through social media





## Community Weather Observing Scheme (CWOS)

- Encourage public to make weather observations and reports
- Via web, Facebook, mobile app to share weather photos and reports



**website**  
[www.co-win.org](http://www.co-win.org)

**Facebook**  
[www.facebook.com/icwos](http://www.facebook.com/icwos)

**iOS mobile app**  
**iCWeatherOS**



# Weather Observation competition And Ambassador Scheme





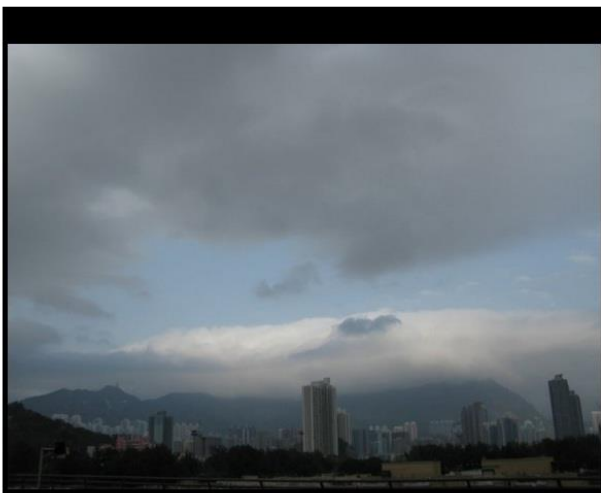
「天氣觀測專題探究及天氣照片攝影」比賽 2014  
Weather Observation and Weather Photos Competition

登入

主頁 已提交的天氣觀測 上載 雲與攝影 關於 比賽FACEBOOK專頁

何明華會督銀禧中學 (第6隊)(21)

MOVE CLOSE



何明華會督銀禧中學 (第6隊)  
27-02-2014 16:08  
2月27日下午天氣報告  
何明華會督銀禧中學天台氣象站  
多雲，吹清涼東風，能見度一般



上載者:  
Team 6-Bishop Hall Jubilee School  
氣溫: 22.6° C 相對濕度: 66%  
風速: 5.97 公里/小時 風向: 東  
能見度: 中  
估計能見度: 6.2 公里  
氣壓: 1011 百帕斯卡  
一小時平均紫外線指數: 1  
附近環保署監測站的空氣質素健康指數(AQHI): 5  
附近環保署監測站的吸入懸浮粒子(PM10): 53 微克/立方米



督銀禧中學 (第6隊)  
上午天氣報告  
14 08:19  
看能見度天氣



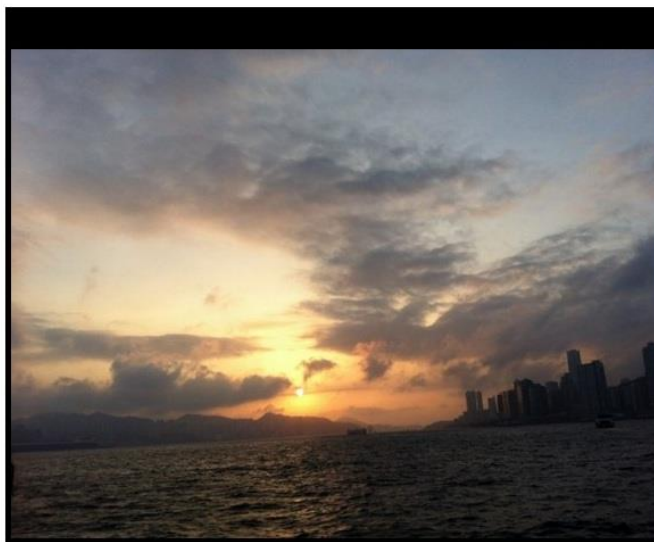
何明華會督銀禧中學 (第6隊)  
2月26日下午天氣觀測  
26-02-2014 16:00  
看能見度天氣



何明華會督銀禧中學 (第6隊)  
2月15日中午天氣報告



MOVE CLOSE



旅港開平商會中學 (第4隊)  
24-02-2014 07:10  
2014.02.24 天氣觀測  
香港紅磡

天氣和暖，氣溫介乎 18 至 19 度，  
大部份時間陽光充足，早上有積雲聚集，



上載者:  
Team 4-Hoi Ping Chamber Of Commerce  
Secondary School  
氣溫: 18.2° C 相對濕度: 66%  
風速: 4.7 公里/小時 風向: 東  
過去一小時雨量: 0 毫米  
過去二十四小時雨量: 0 毫米  
能見度: 高  
一小時平均紫外線指數: 0



# Photo contribution to HKO Calendar





# Social Media

So should we put much effort into using  
Social Media as a medium for weather  
information?

What we need to beware of?

Guidelines on Strategies for use of  
Social Media by National Meteorological  
and Hydrological Services



World  
Meteorological  
Organization  
Weather · Climate · Water  
WMO-No. 1086

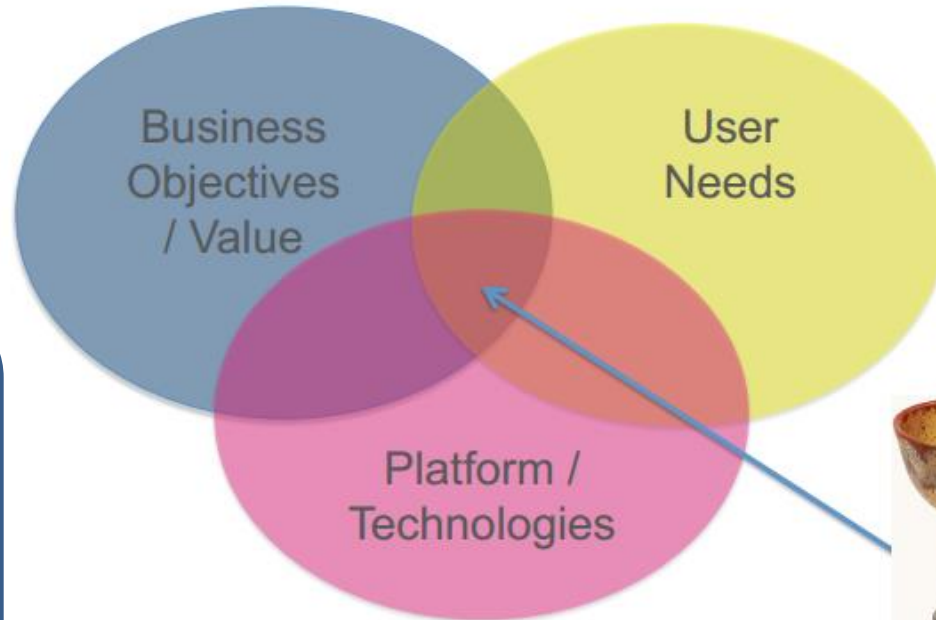
PWS-24

# Social media for NHMSs

- Basic
  - Complement/back-up “old” service delivery channels
  - Strengthen community understanding and hence resilience
  - Improve organizational transparency, visibility and reputation
- Advanced
  - Use digital intelligence technologies to better understand its audience and gauge the effectiveness of the organization’s activities, what people are concerned about, interact with users and gather information on their needs, knowledge and expectation, and fill such gaps, if any



# The Holy Grail of Social Media



## What's your business objectives?

- raise awareness of NHMS, increase visibility
- disseminate real-time warning information
- engage in two-way communication with the public

## Platform/technology?

- Facebook, Twitter, Youtube
- Google's Blogger, LiveJournal, ...
- video editing programmes
- Monitoring tools

## Who is the audience?

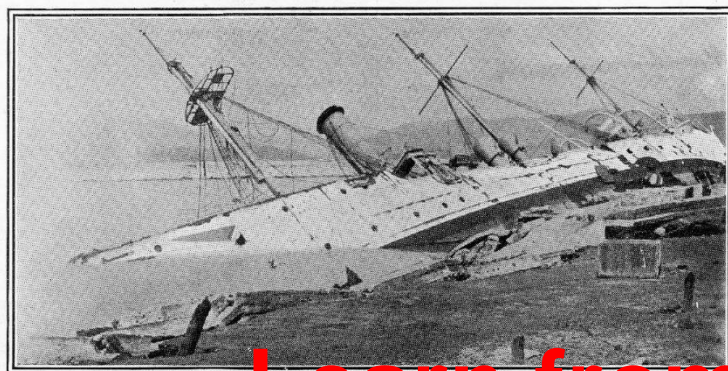
- fan/friend of NHMS, a man-in-the-street, special users, or a mix of all
- the audience determines the nature of the content

# Education

- Youtube & TV – Cool Met Stuff
- Blog and Educational Resources on website
- Public seminar
- Open day







A STERN VIEW OF THE "PETRARCH."



THE WRECKAGE OF THE FRENCH TORPEDO-BOAT FRANCISQUE



THE DEATH-TRAP FOR CRAFT IN SHELTER: YAUMUTI, KOWLOON.

Learn from history  
(1874、1906、1937)



# TV Documentary on typhoons, rainstorms, drought, climate change



Collaboration with  
Radio Television Hong  
Kong

English version and  
DVD production are in  
progress



# Coming soon

## Short Youtube video on Typhoon-related hazards

### Typhoon Committee

### Working Group of Disaster Risk Reduction

- Making the information more understandable to the public and make them react (led by HKO)
- Short video of around 5 minutes, with overall theme on tropical cyclone-related hazards, and with clear message for people to respond: ***“Run from the Water; Hide from the Wind”***
- Then, shorter, separate films to cover the following:
  - a) Wind
  - b) Waves
  - c) Storm surge
- Will be shared via Youtube platform

# Challenges and Opportunities of Media Communications

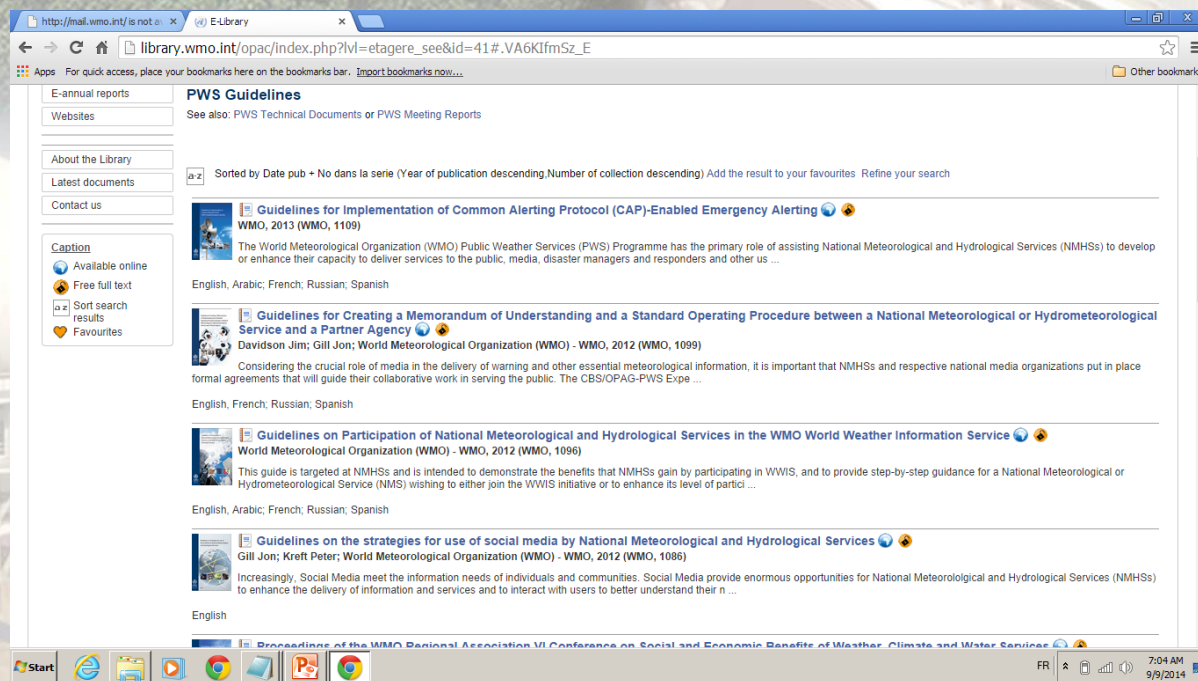
- Coordination
- Communication
- Social Media
- WMO Guidelines



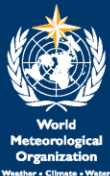


# WMO guidelines

- 27 guidelines produced so far covering key skills required for effective service delivery
- The guidelines are freely available in pdf format at:  
[http://www.wmo.int/pages/prog/amp/pwsp/publications\\_en.htm](http://www.wmo.int/pages/prog/amp/pwsp/publications_en.htm)



# Guidelines related to Communications & Media



Produced by the Public Weather Services Programme (PWSP)  
of the World Meteorological Organization (WMO)

## WORKING WITH THE MEDIA

PWS-SG 5

This summary guide is for National Meteorological and Hydrological Services (NMHSs) staff who work with the media. It provides advice on how to approach media interviews, how to handle questions and what to do when faced with difficult situations.



### Understanding the world of the reporter

- Reporters, like meteorologists, work under a great deal of time constraints. They often have to cover a huge range of subjects and need to produce stories quickly.
- Non-science reporters often have a poor understanding of Meteorology.
- Media companies/organizations often give simple weather stories to inexperienced junior reporters who need guidance to understand what they are writing about.
- There is a high turnover of reporters, so you will often be educating new ones, and reiterating previous information to the others.

### Why is there a need to work with the media?

The media are the main vehicle to get the perishable information contained in warnings and forecasts to the public. Establishing and maintaining a good working relationship with them helps NMHSs get their message out on time.

### How can NMHSs develop good working relationships with the media?

#### Sources of comment

- Not all sources of media who comment about the weather are credible and authoritative. Try to always correct misinformation. Accuracy is a common

- It is up to you to consistently provide credible and authoritative information for the media.

### Distinguish between facts and opinions

- Some questions seek factual answers (How much rain fell? What's the forecast for the weekend?). These are more likely to be asked by less experienced reporters.
- Some questions seek your opinion about the performance of the NMHS. Unless you have authority to do so, do not answer them. Instead, refer the journalist to senior staff.
- Some questions will be politically sensitive. If such questions are likely, be prepared to stick to the facts, or pass the journalist to the relevant senior NMHS staff.
- Many of these sorts of questions will be asked by more experienced reporters – they will often ask difficult, more focussed questions than junior reporters.

### Have rules

- NMHSs need to establish clear internal protocols for working with the media. Develop official positions on matters of policy and ensure that the staff understand them before talking to the media. Use your most senior staff to handle sensitive media issues.

### When you have finished, stop talking!

- When you have answered a question, the reporter

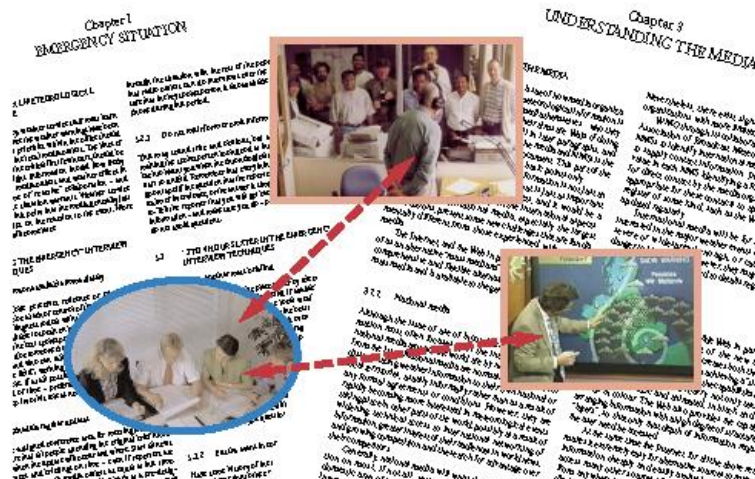


World Meteorological Organization

## GUIDELINES ON THE IMPROVEMENT OF NMSs—MEDIA RELATIONS AND ENSURING THE USE OF OFFICIAL CONSISTENT INFORMATION

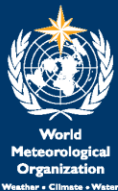
PWS-3

WMO/TD No. 1088





# Guidelines related to Communications & Media



Produced by the Public Weather Services Programme (PWSP)  
of the World Meteorological Organization (WMO)

## COMMUNICATING FORECAST UNCERTAINTY

PWS-SG 1

This summary guide is for forecasters who are required to include uncertainty information in weather and climate forecasts and want to know the best way to present it. It provides advice on communicating probability forecasts, or other kinds of uncertainty information.



### Why communicate forecast uncertainty?

**Uncertainty information helps people make better decisions:** People can make good plans and the right choices when they know the options they are facing. These plans range from simple things such as what clothes to wear, to major emergency responses such as community evacuation.

**Communicating uncertainty helps manage user expectations:** Meteorologists are routinely faced with forecast uncertainty. This can be stressful when users have an expectation that the forecast is always right. Communicating forecast uncertainty leads to a realistic understanding of the accuracy and reliability of the service.

**Communicating uncertainty promotes user confidence:** Surveys show that uncertainty information does not undermine people's confidence in the service. Instead, it reassures people that they are getting the full story, and gives them confidence that the service is being provided objectively and scientifically.

**Forecast uncertainty reflects the state of the science:** Meteorological services must be based on good science. Uncertainty is inherent in forecasts and it is appropriate that this uncertainty be incorporated into the services that are provided.

### How should forecast uncertainty be communicated?

**Tailor the information to the audience:** Different users have different requirements and varying levels of understanding. For some, detailed information can be provided, including complex graphics. They may even have in place, specific response plans that describe certain actions to be taken according to defined thresholds. Less sophisticated users will prefer simpler information.

**Understand how people interpret uncertainty:** A person's interpretation of uncertainty can be influenced by personal feelings of risk and vulnerability. Make sure that your terminology is clearly defined so that people have an accurate understanding of the uncertainty involved.

**Use colour wisely:** Colour can be a powerful way to communicate meaning. Save the strongest colours for when they are needed. For example, use red only when there is a strong likelihood of a high-impact event.

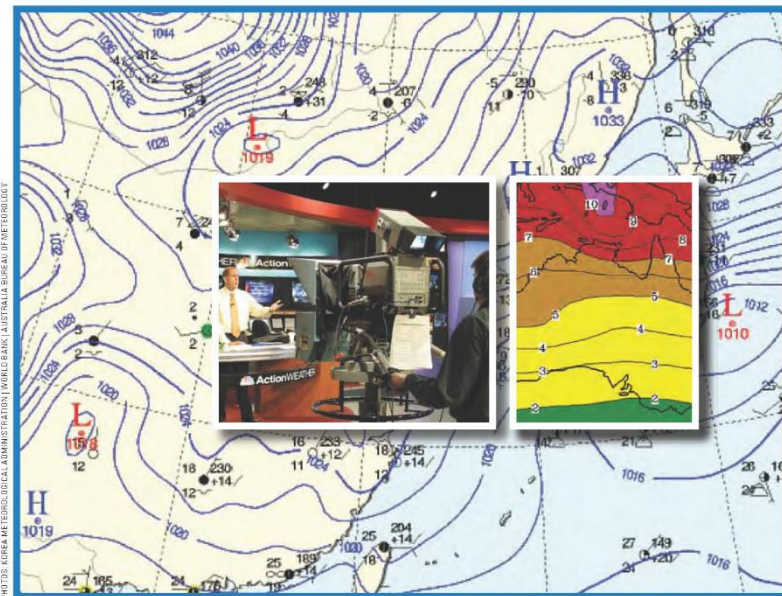
### Examples of uncertainty information

Uncertainty information can be presented in all sorts of ways – simple plain language such as “chance of” and “possible”; numerically using indices and probabilities; descriptions of alternative scenarios, pictorially using icons, graphs and charts.

## EXAMPLES OF BEST PRACTICE IN COMMUNICATING WEATHER INFORMATION

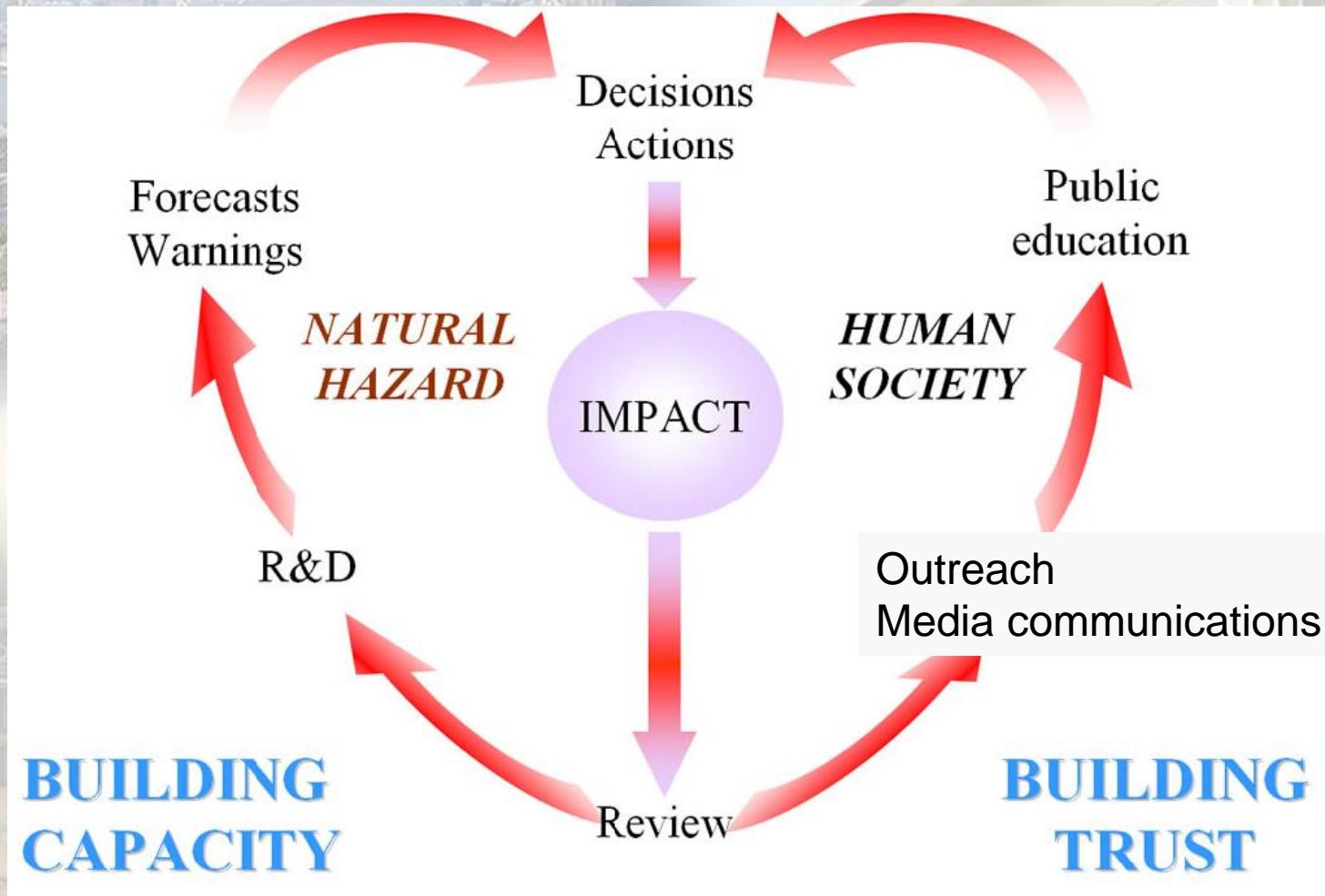
PWS-17

WMO/TD No. 1409



PHOTOS: KOREA METEOROLOGICAL ADMINISTRATION (WORLD BANK); AUSTRALIA BUREAU OF METEOROLOGY

# Meteorological Services have to work on both science and human aspects





- Thank you

