

# Mobile Content Access - protecting the content owner

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# agenda

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## ◆ mobile content access overview

- ◆ state of the art technologies for content distribution in mobile

## ◆ issues and challenges

- ◆ end user issues
- ◆ challenges for the content owners

## ◆ tools and solutions

- ◆ DRM technologies
- ◆ emerging technologies for privacy protection

## ◆ conclusion

# mobile content distribution

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- ◆ commercial content distribution
  - ◆ news and information services (e.g. SCREEN3)
- ◆ personal content distribution
  - ◆ content sharing services for consumers
- ◆ where the two meet
  - ◆ "citizen journalism" where consumers submit content for redistribution e.g. BBC website, Yahoo! etc

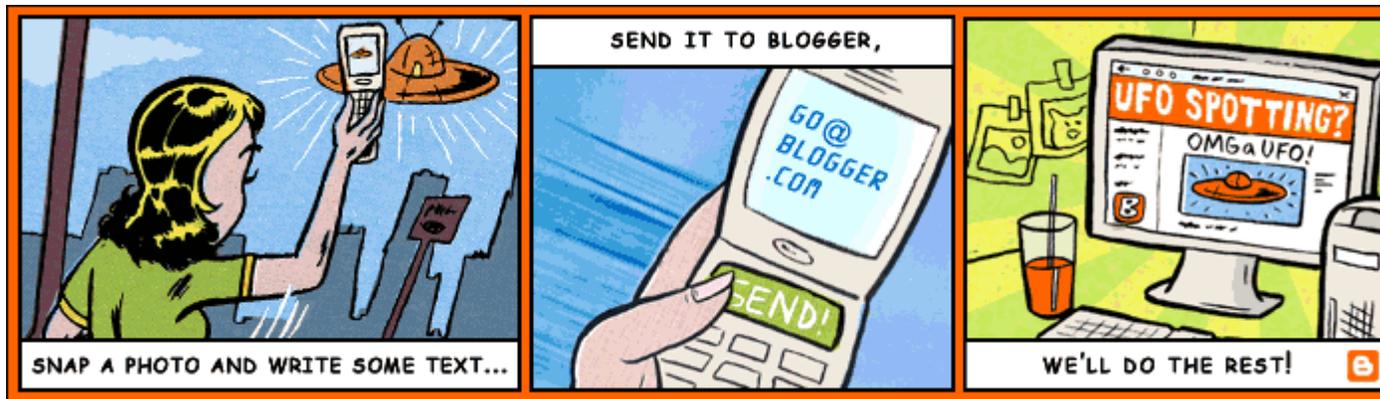
# mobile news distribution - SCREEN3

- ◆ SCREEN3 pushes content and information to the user via the idle screen (zero click service)
  - ◆ Users see SCREEN3 content every time they view their home screen
  - ◆ When user sees an item of interest, they can click through to full versions of content or to receive advertised services
- ◆ Operator gains revenue from service subscriptions and purchase of linked content and services
  - ◆ deployed by Cingular (US), Telefónica (Europe), and operators in Asia
- ◆ Personalisation for SCREEN3
  - ◆ User inputs preferences for topics of interest, and can receive content appropriate to those interests



# personal content sharing

- ◆ web-based services and blogs
  - ◆ YouTube, flickr, Picasa, Zonetag, Blogger



- ◆ peer-to-peer sharing
  - ◆ content sharing via Bluetooth, MMS, email etc
  - ◆ on-line sharing sites (of varying degrees of legality)

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# mobile content distribution - challenges

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- ◆ end user concerns about privacy
  - ◆ wanting choice in who can see their content and its annotations
  - ◆ control over where the content is further distributed
  - ◆ need to have a simple system which users can manage themselves
  - ◆ affects the content creator and people in the picture/video
- ◆ content owner concerns about protection of assets
  - ◆ rights protection to ensure content is not illegally copied
  - ◆ protection to avoid misuse and inappropriate use
  - ◆ asset tracking systems
  - ◆ simple license generation and tracking

# agenda

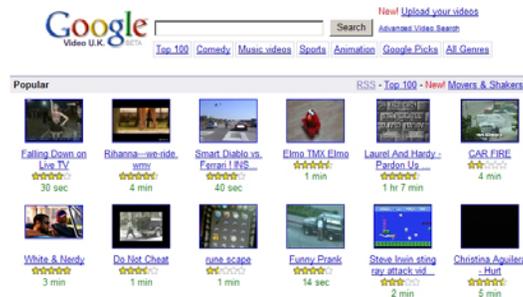
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# DRM technologies

## ◆ proprietary solutions for commercial content

- ◆ Apple iTunes for movies, music and TV shows
  - ◆ *specific to Apple content on specified devices*
- ◆ Windows Media Digital Rights Management
  - ◆ *distributes license to play the music along with the content*
  - ◆ *specific to windows media player format content*
- ◆ Google Online Video Store
  - ◆ *only works with the player that downloaded the content*
  - ◆ *content cannot be viewed offline as the DRM solution must always be enabled to seek updates to the license*



# DRM technologies

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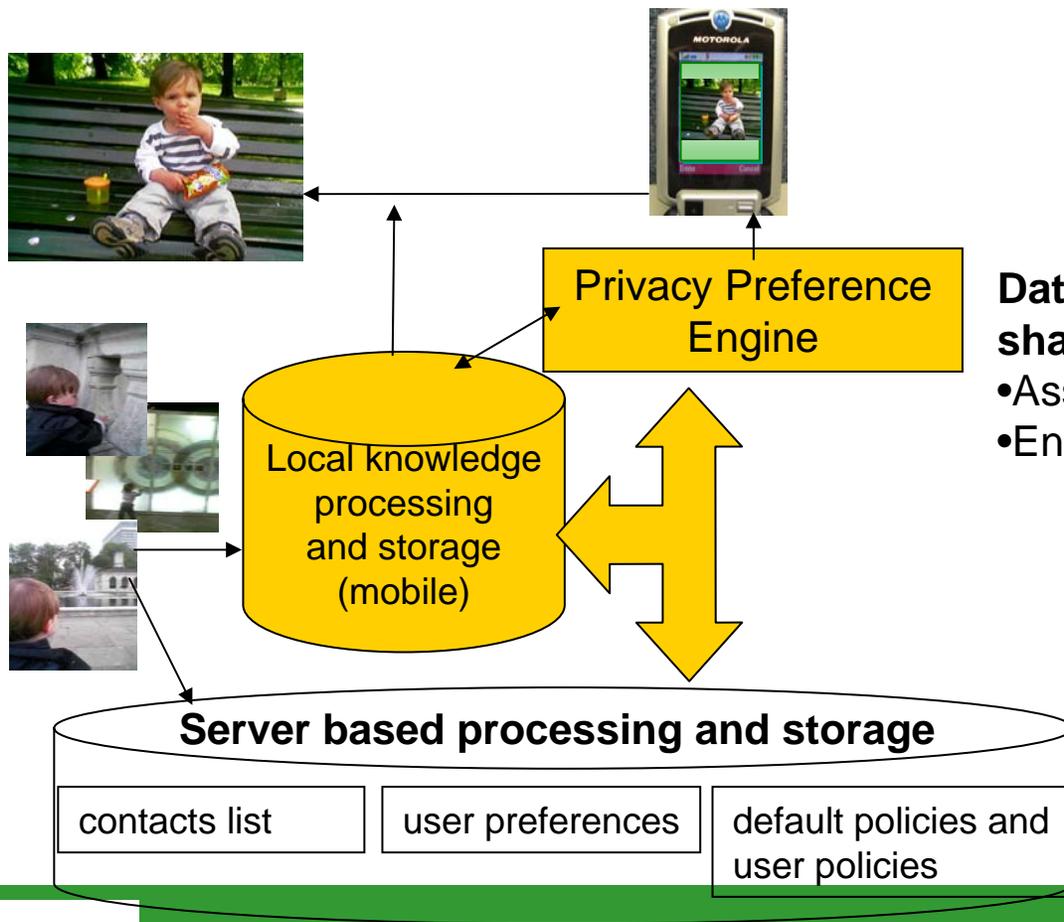
## ◆ Open Mobile Alliance DRM 2.0

- ◆ content providers can grant permission for media objects that define how they should be consumed
- ◆ independent of the media object formats and the given operating system or run-time environment
- ◆ covers games, ring tones, photos, music clips, video clips, streaming media
- ◆ content is distributed with cryptographic protection; hence, the Protected Content is not usable without the associated Rights Object on a Device.
- ◆ OMA-Marlin alliance aimed to support all platforms (OMA for mobile and portable, Marlin for PCs and IPTV services)



# personal content protection

- ◆ solutions for commercial content may be too expensive and complex for consumers
  - ◆ aceMedia is seeking lightweight and extensible solution for content sharing
  - ◆ supporting the user in enjoying their content without privacy concerns



## Data model plus rules for content sharing

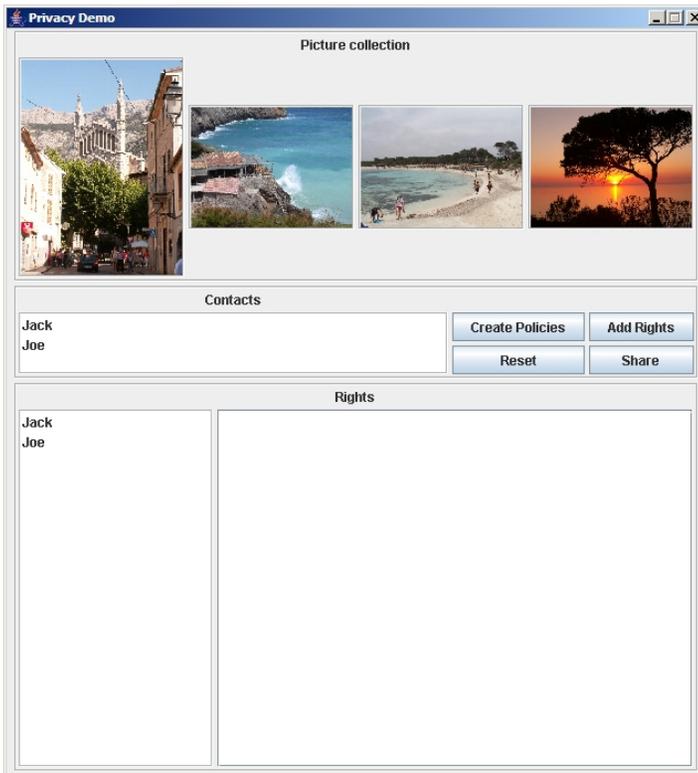
- Assist in user defining policies
- Encode and attach policies to content

## Examples Rules

- Close friends to view and copy
- Friends view only
- No anonymous viewing

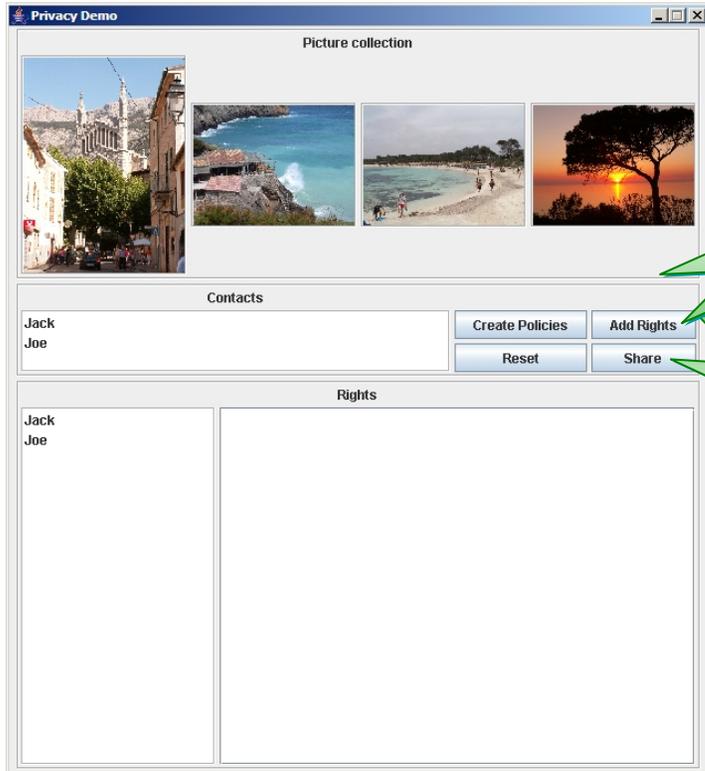
# self-governing rules for content privacy

- ◆ simple interface to enable user to quickly express preferences for how their content can be used
  - ◆ intelligent processing hidden from the user to simplify the experience
  - ◆ aiming for multi-platform application (mobile, PC, set-top-box)



- ◆ sharing my pictures with Jack and Joe
  - ◆ different levels of trust for each
  - ◆ requires simple method to express my preferences and attach them to the images before sharing

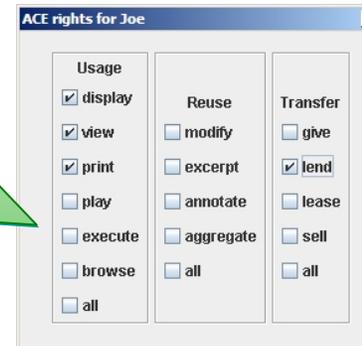
# example content sharing



defining the rights for each recipient

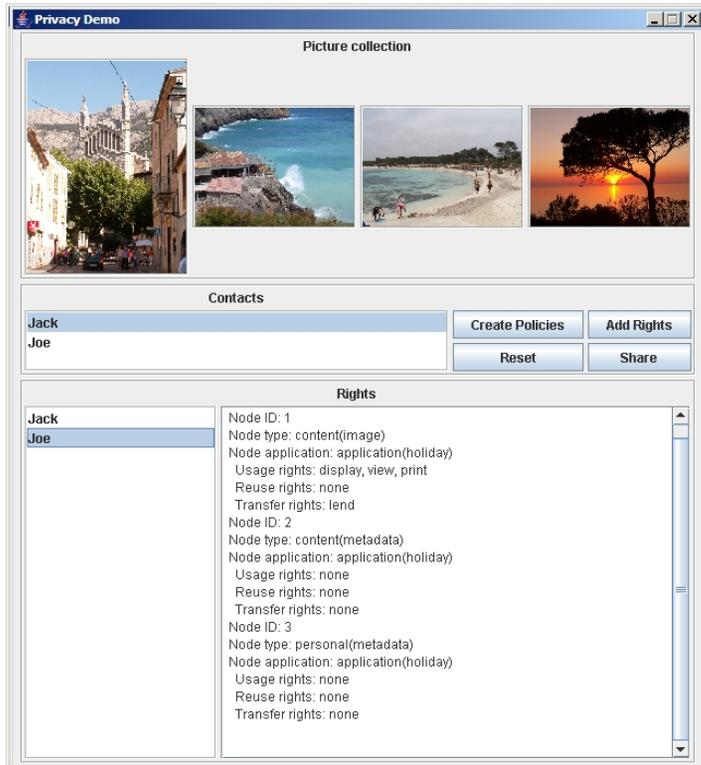


Jack



Joe

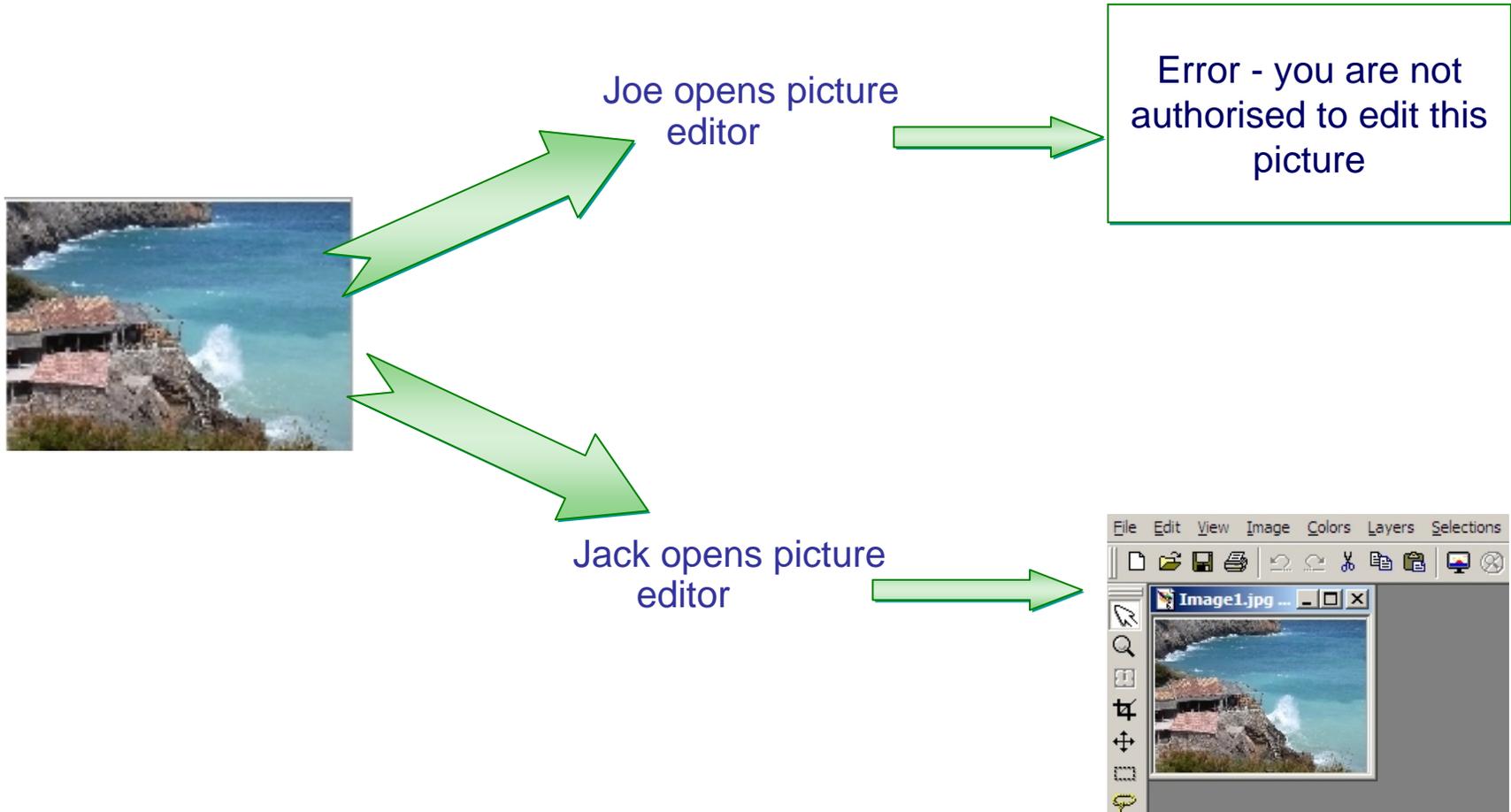
# example content sharing



checking the rights applied

# Joe and Jack receive the content

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# conclusions

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- ◆ mobile content sharing and content distribution are popular applications
- ◆ content owners are concerned about protection of assets
  - ◆ commercial DRM solutions can be applied in some application domains
- ◆ end users are concerned about privacy
  - ◆ fewer solutions available to end users
  - ◆ aceMedia has developed technology to assist

# contacts

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- ◆ Website : <http://www.aceMedia.org>

- ◆ **aceMedia partners** : Motorola Ltd, Philips, Queen Mary University of London, Fraunhofer, Universidad Autónoma de Madrid, Alinari, Telefónica I&D, Dublin City University, CERTH-ITI, France Telecom R&D, INRIA, Belgavox, University of Koblenz Landau