Hi Jon & Justin

Just some thoughts after this morning's conversation with Justin about the cognate relevance calculations.

The basic problem is that:

- **suppose a mail is sent to 200 people.**
- **suppose that 20 is the number in a cognate group**

To find the global relevance requires data from 200 sources and gives one figure for global relevance of the mail.

Each of the 200, however, will have a cognate group, and the calculation of cognate relevances for each one will require 200x20=4000 figures to be combined into 200 individual cognate relevances.

Now obviously the cognate relevance needs to be updated faster than the global, because it is what offers the best guide to the user as to whether to prioritise looking at this mail.

So how should recalculation fo cognate relevance be done?

(System-1)

Cognate relevance is recalculate whenever the user acted on mail or refreshed the browse mode.

This means that if eg there are 150 active mail items in the box then each time the user acts or refreshes there will need to be 150x20 = 3000 pieces of information combined into 150 separate figures. Refreshing many of these would be pointless, if they have been around a long time. Changes are more likely in the early stages of their life cycle.

(System-2)

Cognate relevance is recalculated on a periodic basis, with a recycle period which starts short and gets longer during the mail's life cycle

This means that each time the review appears, if 200 received the mail then there has to be 200x20 =4000 retrievals and 200 calculations. This will happen even if the user is not accessing or reading mail (eg if he is on holiday). The advantage is that this will be frequent only in the early stages of the mail lifetime. A disadvantage is that if there are peak hours for sending and viewing mail then the most reviews will be taking place not in down times but in peak times.

(System-3)

Cognate relevance is generally calculated on a periodic review basis, with a shorter cycle in the earlier stages of the mail's lifecycle. The actual period in these early stages, however, would depend on whether the user was active on his mail.

When the mail arrives it would have some local time-flag indicating periodicity of review of cognate relevance, and this would reduce if the user refreshed the browse-mail or did a mail action. This contrasts with (System-2) in which there is only a single time-flag for any given mail, and a single mathematical series for review of all recipient's cognate relevance for that mail simultaneously. Mathematically one *could* construct a function with eg an exponentially increasing review period, but with its parameters also dependent on mail-action frequency.

(System-4)

Cognate relevance calculation is triggered by recipient refresh or mail-action in its early stages, but thereafter on a periodic review basis, with an increasing cycle length.

Within a certain time of arrival, say the first two hours, which we could call "phase-one", any refresh or action by the user on other mail would trigger the recalculation of the cognate relevance for this particular mail. After that cut-off period, ie during phase-two, recalculation would be done on a periodic review basis.

The advantage of this is that it focuses the greatest frequency of recalculation where it is most needed. It is also possible to build in a "minimum recalculation cycle" during phase-one, so that it is not literally every mail-action that actions recalculation but that minimum-period reviews take place on this mail during times the mail browse is "active". In the critical early stages of the mail review occurs when relevant (ie when the user is looking), but later in its life its cognate relevance is not triggered unnecessarily often.

Thinking about it, actually the hybrid system-4 seems to me to be the best. Obviously I don't know how easy it would be to program, but because the two phases are common to that mail for all recipients it ought to be possible.

Anyway, you need to make a decision and then I can alter the document accordingly.

EXHIBIT 2071

metadata slip sheet

BegDoc	REV0001062
BegAttach	REV0001062
File Name	Comments to Justin and Jon Oct 15th.doc
LastCreateOn	10/15/2005 7:30 AM
LastModifiedDate	10/15/2005 7:30 AM
Custodian	Marston, Paul
Author	Marston
SortDate	10/15/2005 7:30 AM
Office-Revision Number	2
Last Saved By	Marston
Exhibit No	