

What is claimed:

1. An apparatus for determining an exchange value at a specific point, comprising of:
 - a first distribution of information items;
 - a means for generating a second distribution of information items, wherein the means for generating uses the first distribution and the specific point;
 - a means for computing a distribution difference between the first distribution and the second distribution; whereby the exchange value for the specific point is the distribution difference.
2. A region generator apparatus, comprising of:
 - a current region;
 - a set of points;
 - a processing means for:
 - selecting at least one top ranked points from the set of points, wherein the points are compared by exchange value,
 - computing the exchange value for at least one of the compared points using a distribution difference,
 - generating a second region using the current region and the at least one top ranked points.
3. An apparatus for determining an include region using the apparatus of claim 2, further comprising of:
 - an initial current region;
 - computing a success metric for the initial current region;
 - a means for determining a set of points;
 - using the region generator apparatus of claim 2 with the current region and the set of points determined to generate the second region;
 - computing a success metric for the second region;
 - repeating the use of the region generator when the second region is preferred to the current region according to the success metrics, wherein prior to repeating (i) the second region becomes the current region and (ii) a new set of points is determined; and
 - stopping when a second region cannot be generated that will improve on the current region according to the success metrics, whereby the current region is the include region.

4. The apparatus in claim 3, further comprising:
 - when the second region is not preferred to current region, repeating the use of the region generator if another set of points can be determined for the current region, wherein prior to repeating a new set of points is determined.
5. The apparatus in claim 1, further comprising:
 - obtaining at least one exchange value using the apparatus of claim 1;
 - a means for determining an include region using the at least one exchange value obtained.
6. An apparatus for controlling an information stream using the apparatus from claims 3, 4, or 5, further comprising:
 - an information item;
 - obtaining an information item value pair for the information item and an information consumer;
 - obtaining an include region region, wherein the include region obtained was initially determined using the apparatus of claims 3, 4, or 5;
 - using the include region and the information item value pair to determine inclusion of the information item into the information stream.
7. A social network using the apparatus of claim 6, comprising:
 - a post or equivalent information item from a first user of the social network;
 - a news feed or equivalent information stream of a second user of the social network, wherein second user has friended, followed, subscribed, or equivalently agreed to receive posts from the first user;
 - a subsystem for determining inclusion of the post into the news feed using the apparatus of claim 6.
8. An advertising system using the apparatus of claim 6, comprising:
 - one or more information items, whereby the information items comprise any combination of advertisements, offers, solicitations or equivalents;
 - a subsystem using the apparatus of claim 6 to evaluate inclusion of the information items into the information stream of at least one information consumer.
9. A publishing system using the apparatus of claim 6, comprising:
 - one or more information items, whereby information items comprise any combination of articles, stories, solicitations, offers, advertisements, messages, notices, videos, audios, or

other equivalents received from at least one publisher, author, poster, sender, contributor, or equivalent information producer;

a subsystem using the apparatus of claim 6 to evaluate inclusion of the one or more information items into the information stream of at least one information consumer;

a distributor to deliver the information stream via web, email, mobile, print or other equivalent medium.

10. An information exchange using the apparatus of claim 6, comprising:

a post or equivalent information item obtained from a first user of the information exchange;
a distributor;

a second user of the information exchange allowed to receive the post via the distributor;

a subsystem using the apparatus of claim 6 to determine exclusion of the post from the information stream of the second user.

11. An apparatus for selecting information items for presentation to an information consumer using the apparatus of claim 1, further comprising of:

a collection of information items;

using the collection as a master distribution;

obtaining at least one exchange value using the apparatus of claim 1;

determining an include region using the at least one exchange value obtained and the master distribution;

use the include region to determine a subset of the collection to present to the information consumer.

12. The apparatus of claim 6, further comprising:

obtaining an audience target for the information item;

obtaining at least one selection criteria;

obtaining the information item value pair using the audience target and at least one selection criteria.

13. A method for determining an exchange value at a point, comprising:

a specified distribution of information items;

compute a distribution difference for the point by the formula $F(c|D) + H(p) * G(c|D)$ with consumer dimension c and producer dimension p and parameters determined from the specified distribution D , and wherein over the relevant range around the point

- (i) F is monotonically increasing in c ,
- (ii) $H(p) * p > 0$ and $H(0) = 0$,
- (iii) H is monotonically increasing in p ,
- (iv) G is monotonically increasing when the point is added and monotonically decreasing when the point is removed;

whereby the exchange value for the point is the distribution difference.

14. A method for computing an exchange value at a point, comprising:
 - a specified distribution of information items;
 - a step for generating a second distribution, wherein the second distribution is an incremental transformation of the specified distribution at the point;
 - a step for computing an exchange value for the point, wherein the specified distribution and the second distribution are used in the computation.
15. A method for selecting at least one top ranked points from a set of points or information item value pairs using the method of claims 13 or 14, further comprising of:
 - compute an exchange value using the method of claims 13 or 14 for at least one of the points or pairs;
 - compare the exchange values of the points or pairs to select the top ranked points or pairs.
16. A method for determining an exchange value for multiple points or information item value pairs using the method of claim 15, further comprising of:
 - a first distribution;
 - (a) compare the points or pairs from the set of points or pairs in claim 15 by exchange value to determine at least one top ranked points or pairs using the method of claim 15;
 - (b) transform the first distribution using the top ranked points to a new distribution;
 - (c) remove the top ranked points from the set of points; and
 - (d) repeat (a) through (d) with the remaining points using the new distribution as the first distribution until there are no points remaining;

whereby the exchange value is determined for the multiple points or pairs.
17. A method for generating a potential include region using the method of claim 15, further comprising of:
 - a first region;
 - a master distribution;

determine a first distribution for the first region, wherein the first distribution is the part of the master distribution in the first region;

compare the points or pairs from the set of points or pairs by exchange value to determine at least one top ranked points or pairs using the method of claim 15;

generate a second region by adjusting the first region at the top ranked points.

18. A method for generating an include region using the method of claim 17, comprising of:
an initial first region;

(a) a step for determining the set of points, wherein the step for determining uses the first region;

(b) generate a second region using the method of claim 17 with the first region and the set of points;

(c) obtain success metrics for the first region and the second region;

(d) when the success metrics indicate the second region improves the first region, designate the second region as the new first region and repeat steps (a) through (d); and

(e) stop when the success metric for the first region can not be improved, whereby the first region is the include region.

19. A method for determining an include region using the method of claim 13 or 14, further comprising:

a possible information item value pair;

obtaining an exchange value for the possible information item value pair using the method of claims 13 or 14;

a step for determining an include region, wherein the step for determining uses the exchange value.

20. A method for operating an information exchange using the method of claim 19, further comprising:

an information item;

obtain the information item value pair for the information item and an information consumer;

obtain an include region region, wherein the include region obtained was determined using the method of claim 19;

use the include region and the information item value pair to determine inclusion of the information item into the information stream of the information consumer.