

# Team Syntegrity: A New Methodology for Group Work

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Team Syntegrity is a new process, developed by management cybernetician Stafford Beer, for enabling groups to work together in a democratic, non-hierarchical fashion to capture their best thinking. It is a particularly appropriate process to use when groups are characterized by high levels of diversity – either because they come from different countries, such as the members of the European Community or NAFTA, or because they come from different political, cultural or disciplinary perspectives.

This article describes how syntegrations look in action, the considerations which apply to their planning and delivery, and some avenues for future development and experimentation. Copyright © 1996 Elsevier Science Ltd

## Background

While reports of the death of hierarchy in western business organizations have no doubt been exaggerated, the direction of the change is not in question. The move toward leaner more efficient organizations means there are fewer middle managers in place and those that remain are spread more thinly, leaving fewer and fewer resources for direct supervision. Employees lower in the ranks are, often by necessity, being given more opportunity to make substantive contributions from the quality movement in customer relations to the use of self-assessment techniques in internal audit. Without a hierarchical structure, however, confusion reigns unless the organization has well developed skills in collaboration and coordination.

Such skills must be developed at both the individual and the organizational levels. Although this is changing, relatively few individuals have received much training or support for cooperation in their preparation for work. From secondary education through graduate studies,

assessment is mainly based on competition and individual effort which succeeds, or not, without much connection to the work of others. There are good reasons for this, not least the difficulty of defending the fairness of an individual assessment based on different levels of effort in a group, but the situation persists that many people do not begin to develop these skills until they begin working in organizations.

As organizations become more complex, it requires additional effort for them to develop a feeling for the business as a whole to guide their actions. Too often, the variety of purposes and perspectives has neither been recognized nor harmonized. The parts may, with the best of intentions, be working at cross-purposes. At worst, their efforts are antagonistic; at best, they incur high opportunity costs. To compete effectively, any organization has to hold a shared view of itself and its relation to its environment.

The frequency of disappointing results from mergers, change initiatives, joint ventures and other inter-organizational relationships is often traced to the difficulty of getting effective collaboration among people from different specialties, different departments and different organizations. Difficulties are compounded when the potential collaborators come from different countries speaking different languages as well as different classes, genders, and races. Not only are there problems with miscommunication in diverse groups, the sheer volume of information and interactions can overwhelm organizational and individual capacities for handling variety.

## Introducing Team Syntegrity

Team Syntegrity is a new process methodology developed by management cybernetics pioneer Stafford Beer (1979; 1981; 1985) to accelerate collaboration and nurture cross fertilization and creativity. It has roots in

cybernetics, in several branches of logic and mathematics, in information theory, in neurophysiology, and in sociology. Beer acknowledges debts to Warren McCulloch (1989) and W. Ross Ashby (1960), who in turn acknowledged the work of Claude Shannon and Warren Weaver (1962), and Gerd Sommerhoff (1950). A special debt is owed to W. Buckminster Fuller (1979) and his ideas about geodesics and the interplay of tension and compression.

Fortunately, it is not necessary to have a command of all these sources to participate in a syntegeation, or indeed to plan and deliver one. The full description is available in Stafford Beer's book *Beyond Dispute: the Invention of Team Syntegeity* (1995). Beer is probably best known for his development and description in several books of the Viable System Model of organizational structure.

This model delineates the different management functions and the homeostats that drive their ability to support the operations under their direction. One of the most crucial of these homeostats is the one that modulates an organization's concern with its present, day-to-day affairs with its attention to its future adaptation and development. He observed that these conversations, as they took place in organizations, were often sporadic and fragmented. Good ideas might die because the innovators who proposed them did not have enough political muscle to prevail; important opportunities for synergy among parallel initiatives might be lost because of missing or ineffective transduction between significant players and a lack of cohesion or organizational closure might lead to a lack of direction and poor mobilization of resources.

In addition, many instances occur where there is no 'management' to carry the can for better or worse. There are only disparate players, of comparable authority and status who may or may not find the means to work effectively together to promote a common objective. For these situations, the traditional organization chart was not only obsolete – it had never had any validity. They could only succeed if they could find the right balance between autonomy and coordination. It had to be rigorous to get anything accomplished and it had to be democratic to maintain their cooperation.

The impetus behind the development of syntegeation was to provide a structure for holding purposeful conversations which would be non-hierarchical and democratic but would be contained and not dissipate their energy or insights. Beer looked to the three dimensional regular solids in geometry to provide a structural model that was both non-hierarchical (no face is necessarily top or bottom) and logically closed to retain information. He chose the icosahedron with its thirty edges, twelve vertices and twenty sides as an ideal shape on which to map the meetings and manage their variety. Beer is by no means the first to be fascinated by the regular solids and their internal relationships. We have all seen the three dimensional models showing how each of the solids is contained, in turn, in the

icosahedron. Students of geometry will also be familiar with the golden section ratios and enneagrams encased in this structure.

Mapping the discussions onto this figure adds rigor without influencing the content of discussions. The group of thirty is often held to be large enough to include a good range of perspectives on an issue without being too large to contain its variety in one place. The result is a facilitated process to engage a group in efforts towards a shared objective. It is delivered by a company called Team Syntegeity International. (TSI) and its affiliated licencees that have been established to deliver syntegeations.

A syntegeation engages a group of thirty participants for several days in an intense mix of facilitated divergent and convergent thinking and conversation. The group is called an 'infoset' because they share information and interest. This is what happens when a syntegeation has been scheduled.

## How it Works

A group wishing to give concentrated attention to considering its future possibilities determines an opening question and invites thirty people who represent the relevant range of opinion on the topic to attend. Often they are members of the same organization, but they could include any mix of stakeholders from a group representing different positions on a political issue to individuals who are coming together to form an interorganizational task force. In a business syntegeation, representatives from different departments and different countries would be expected to attend along with, perhaps, suppliers, customers or collaborators.

Careful attention is given to choosing a site. The space needs to accommodate the full group meeting in plenary session, two groups meeting simultaneously in small groups, the logistics staff and equipment, and a lounge/refreshment area. Fixed tables and chairs which impose distance between discussants and stiff, formal, or noisy environments are particularly to be avoided.

Facilitators and staff are briefed. Although the process is content neutral and the facilitation is explicitly process oriented, a number of decisions will need to be made about scheduling, participant materials and orientation and special considerations. In addition, background information is helpful in anticipating the preferred style of support.

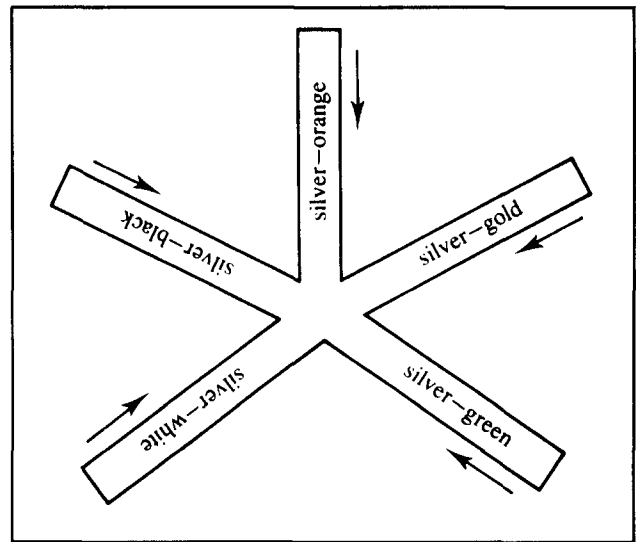
On the day, the participants arrive and, after a short briefing, are invited to put aside their usual inhibitions and to write down any statement that seems to be important on a post-it note. There is only one criterion for these statements but it is not always an easy one to fulfil – the statement should be phrased in such a way that someone in the group would be likely to take issue

with it. 'Motherhood' statements do not stimulate creative interchange; statements that are either controversial or specific enough to imply a decision, do. A group typically generates between one hundred and two hundred of these statements ranging from the profound to the practical to the humorous.

These individual statements form the basis for a series of free-floating discussions called the Problem Jostle. When people have finished posting their statements on the wall, those which appear to be addressing similar points are clustered. Participants are invited to take any of these 'Statements of Importance' to one of ten or so flip charts and begin a discussion on that theme. Issues which generate the most interest and debate are restated as 'Aggregated Statements of Importance' and signatures are sought to support the statement's inclusion in the next stage of the process. Five people must sign to nominate the statement. It is by no means necessary that the signers agree with the statement – only that they believe it should be discussed. After several hours, a number of these Aggregated Statements of Importance will have been posted as candidates to be one of the twelve topics discussed for the rest of the process. Groups have posted from fifteen to over fifty of these statements, although the norm is about twenty-five.

Experiments have been done using several ways of selecting these topics but the favored one so far is an heuristic strategy. First, facilitator asks the group to attempt to elide similar topics. Next, participants are invited to distribute twenty sticker votes among the remaining candidates. This allows an individual who feels strongly that one or two particular topics should be chosen to weight their votes so that an element of salience can be added to the choice. When the votes are counted, there are often six or eight clear winners, and about the same numbers of maybe's and clear losers. Sometimes topics in the maybe column can be rethought or merged and a consensus will form around the selection. If choices remain, a final sticker vote is held. While this is less crisp than deciding by a straight vote, it allows for more variety to be encompassed in the decision. The desired outcome is that all the chosen topics will have substantial interest behind them.

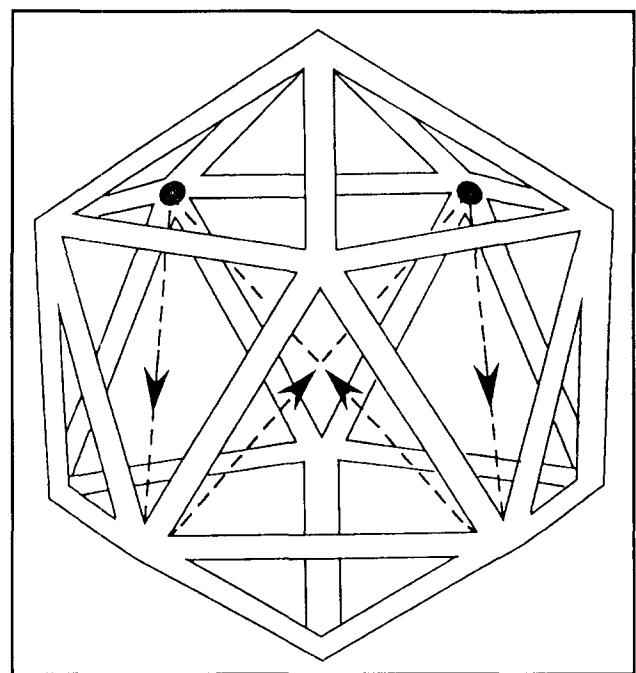
When the twelve topics have been selected, the participants rank their preferred topics from one to twelve. A computer program written by Josephine Hancock shuffles different arrangements of topics on the icosahedron and topic preferences of the participants to achieve a high level of satisfaction. In practice, it has been possible to give highly ranked preferences to most participants. The program assigns each participant a role as one of the thirty edges or struts that connect, in groups of five, to twelve color-coded vertices of the icosahedron. Each of these roles combines two colors and no two struts will have the same two colors. Two other unique and complementary roles as a 'critic' of a next-but-one team are attached to each strut. This is where the tensile strength of the process comes into play. The result is a set of twelve interlocking teams with



**Figure 1 Five Struts Arrayed Around a Point with Colors/Names**

five members and five critics which distribute the topic discussions evenly. As the icosahedron is a regular solid with no top or bottom, no team may be said to have primacy over any other.

The topics are discussed in detail in the next stage of the process which is called the Outcome Resolve. The color-coded teams hold three rounds of meetings in a prescribed order. It makes for a tight schedule as only two groups of five team members and their five critics can meet simultaneously. The responsibility of each team is to discuss their topic and produce a statement at the end of each meeting which captures their thinking. The contributions of the five team members are supplemented by the critics whose role it is to play the consultant or devil's advocate, commenting on the team's process or on points it may have missed in its consideration. In each meeting, which may run from



**Figure 2 Icosahedron**

thirty to ninety minutes depending on the time available, the critics are given a block of time in which to make their contributions. A participant will be engaged directly in two teams as a member and two teams as a critic which will occupy him or her during four of the six scheduled time periods. In their two 'off periods' participants may observe (but not speak) in another team meeting or may use them as private time.

A facilitator may support these meetings at a variety of levels of engagement. Typically, the facilitator may keep time and scribe for the group. Sometimes a group decides that it is appropriate for the facilitator to take a more active role by acting as moderator or by intervening on process issues. However, in a syntegration, the facilitator does not contribute to the content of the discussions.

By the time a participant reaches the second round of meetings, or iterations, a great deal of information will have been shared. He or she will have been in a session with at least one member of eleven of the twelve other teams present as either a team member or critic. In addition, the statements of each of the teams are typed up and posted with opportunities for giving graphic 'applause' or for adding additional comments. This yields a very high rate of both bonding and communication. People share their perspectives and come to at least a partial understanding of the frames of reference of other members of the group. The discussions make people more aware of the multiple models or perspectives their fellow participants (or, indeed, they themselves) bring to bear on the different aspects of the topics under consideration. This sharing lays the groundwork for new pattern perception and creativity.

As the sessions progress, it is common for a point made in the discussion of one topic to surface in other topics acquiring richer meaning as it circulates and returns in subtly altered form to its source. This phenomenon is known as reverberation and it adds significantly to the sense of group consciousness.

One significant difference between syntegration and other group work processes is that the participants are evenly and uniquely distributed around the topics. It makes for very heterogeneous groups which often stay together during meals and informal time. It has been the experience of the delivery teams that groups that might normally reassemble along racial or cultural lines are to be found, still mixed, after the sessions are over. This feature could be very valuable in the European Community where the very real benefits of diversity are sometimes offset by cultural barriers to communication. Two participant comments illustrate this point very well:

*'This experience showed me that no matter what color or gender we are, we are able to sit down with one another and have a rational conversation.'*

*'I realized that something extraordinary had taken place over the*

*weekend. It was the connection I felt between myself and the others . . . almost as if I had known them for several years . . .'*

After the third session in the Outcome Resolve, the teams come together in a plenary session to present their results to the full group. This stage is usually a high point in that everyone gets to see how the pattern of their statements comes together to make a whole. After this, there are a number of options depending on the group and the purposes for which it came together.

## After the Syntegration

Joe Truss, President of TSI and a contributor to the 'Collaborator's Surplus' in *Beyond Dispute*, has developed a protocol for planning and implementing actions determined on the basis of the twelve Outcome Resolve statements which retains the color relationships and enables any subset multiple of three to map the relationships of the whole icosahedron. This protocol utilizes the triangular faces of the icosahedron, each of which includes three players, two of which are members of each of the three teams associated with the nodes they connect. With a certain amount of geometrical manipulation, the thirty strut icosahedron is reduced to a twenty-four strut cube-octahedron which can then be collapsed into a triangle via the other intermediate polyhedra. The practical result of this abstract thinking is that a syntegration does not require the full complement of thirty people to begin or to continue to address a broad opening question and to plan for implementation.

## Development So Far

At this time of writing, TSI and its predecessor informal networks working with Stafford Beer have conducted more than thirty facilitated syntegrations since 1990 in academic, business, non-profit, public and government settings since the first experiments were conducted at the Manchester University Business School where Beer was a Visiting Professor. The purposes have varied from that of a business unit in a corporation planning its future, to a non-profit organization bringing parties in a dispute together to engage in conflict resolution. A handful of organizations have conducted, or are planning to conduct, multiple syntegrations. This group includes a large multinational financial institution based in Switzerland which has held three, a business school which has for two years conducted simultaneous syntegrations for its incoming students and an international non-profit organization and two universities which have each held two. Four syntegrations are scheduled for this spring, two of which are repeats. An international organization contracted with TSI to produce a manual for self-facilitated syntegrations. It has held meetings in a number of different countries using a number of different languages in both the First and Third Worlds.

For most organizations, however, the self-facilitated version is not recommended. The work of being a participant is intense and people cannot accommodate additional roles and responsibilities without detracting from their experience of the process. Ideally, they will also be able to go off site so that they may share meals and have informal time in the evenings. Facilitators support the group by acting as tour guides to what, it must be admitted, is a complicated schedule of meetings. They may also, as the group directs, take a more or less active role in moderating Outcome Resolve discussions or taking running notes for the group's reference in writing their statements. Logisticians are on hand to produce detailed and adaptive schedules and other materials, to return flipchart statements in clean typed copy and to generally field requests and solve problems. In addition, one TSI delivery team is fortunate to include the capability of setting up and performing a musical variety show – with customized lyrics for the event. While not a requirement, the addition of a musical evening provides a different way for participants to produce and enjoy a common project which is a significant enhancement of the experience. It seems to be valuable to plan some type of social evening for the group.

## Some Considerations

Many of the same considerations apply to an organization contemplating engaging in a syntegration as in any group process. While the protocol of a syntegration is relatively stable, and can be reliably delivered by an experienced team, there are a number of questions which must be asked of the sponsor to plan the event and its front end and follow-up activities.

First, why do it and what is the desired outcome? There can be many good answers to this question but without one, it will not be possible to plan effectively or to reap its benefits. Normally there will be a champion or an internal organizer who acts as liaison with the delivery team and who sets the parameters of time, venue, recording protocols and cost. Successful syntegrations can be mounted for a variety of purposes but each will suggest or dictate some particulars.

The attitude of the sponsoring organization is important too. If the ethos of the organization is autocratic, it may not be able to utilize the results of an open outcome process. If a group inside an organization has neither decision making nor advisory power, holding a syntegration may lead to frustration or cynicism.

Second, what is the infocost and who should be the participants? Some syntegrations can be almost self-selecting. A professional society, for example, might invite any interested member to join a special conference on a pay-as-you-go basis. In others, such as a university class or a business unit in an organization, the selection of the participants will be close to a given. Where the

group will have a decision making role, careful selection procedures will have to be followed to include all the relevant stakeholders. If the selection process was held to have been biased or exclusionary, the end result may do more harm than good even if the participants come up with good ideas and enjoy themselves thoroughly. Even when no fairness issue is present, if important perspectives are omitted, the organization may find itself operating with a false sense of well-being which will shatter as soon as it comes into contact with the omitted parameter.

Most of these considerations are based on the strength of the bonds between group members. Stafford Beer has recently been pursuing research on the syzygy of groups which undertake syntegrations. Syzygy comes from a Greek word for 'yoking'. It is used as a measure of how closely the groups were bound before and how closely they expect to be bound after the syntegration. Within this parameter, certain aspects of the processes may be relaxed or tightened to achieve the appropriate result.

Third, are there any constraints which must be accommodated? This is an area where there are trade-offs of many kinds. For example, if conflicting parties wish to meet in a syntegration, they will have to decide how important it is that they be free to speak without attribution. If this is important, there will be a corresponding limit to how much of the discussion can be captured for future reference. If emotions are running high on a question, detailed notes may be acceptable but audio or video tape might be too intrusive or too revealing. If the group includes factions vying for dominance, it may be important for the delivery team to be seen as completely neutral – even if this means that they do not know enough about the situation to pick up on important cues.

The most commonly cited constraints are those of time and money. With syntegrations as with many other processes, there is an element of 'you get what you pay for'. Most of the people who have participated in three or four day syntegrations believe that they could have done better with five days. The five day program allows for longer meetings which may give creativity more chance to flower. Cost variability is tied to three main factors: the time of the participants, the level of meals and accommodations and the staffing level of the delivery team. Six people – four facilitators and two logisticians – is about the minimum for a fully facilitated syntegration. If full video recording, background cybernetic analysis, translation or other services are desired the staff complement will rise accordingly. Conversely, if the organization can provide some of its own facilitation and logistics, the TSI delivery team might be reduced to three. The operant standard here is the level of support and comfort the participants expect.

Fourth, does the group need a jump start to get the most out of a syntegration? A jump start may be provided by preliminary process workshops such as systems modeling or lateral thinking or specific training in

technologies such as quality measures. Some organizations may wish to spend some time doing a preliminary Viable System Model diagnosis of the situation so that they can begin with some systems concepts and a neutral common language. An organization may also wish to assemble some traditional briefing materials on the current and potential states of various aspects of the organization's major activities.

Fifth, what sort of documentation is required? Syntegrations to date have been documented in a variety of ways. At the low end, participants are given print-outs of their Statements of Importance, Aggregated Statements of Importance, final twelve topics and the Statements from the three iterations of the Outcome Resolve as a record of their efforts. At the high end, printed materials are supplemented by video, or, in one case, a CD Rom of the event was made. Which is chosen, depends on the needs of the sponsoring organization and the resources at their disposal. If the infoset is one for which the process IS the outcome, as is the case with some search conferences and most class-based academic applications, minimal documentation is sufficient. If the aim of the syntegration is to marshal the capabilities and creativity of the participants, or if one of the outcomes is to be a publication, the material must be in a form that will communicate its information clearly to people who have not been there. Indeed, in the case of some publications, it will be necessary for the outcomes to stand on their own without reference to the process that produced them. As mentioned earlier, some applications may carry special constraints of privacy or confidentiality. In those cases, it is necessary to negotiate the rules in detail beforehand with both staff and participants.

Finally, what kind of follow-up is appropriate? If the infoset has low syzygy, little follow-up may be required. But for many sponsors, a syntegration forms the base from which concerted action flows. Some of this comes, to be sure, from the strong sense of bonding which

seems to occur naturally in a syntegration. For many, it will be the detailed plans and their implementation which flow from the syntegration that make it worth while.

One option, described by Joe Truss, is called Face Planning. Groups of three, corresponding to the triangular face described by their struts, meet to plan actions that would advance the themes of their three topics. Each individual participant, represented by a strut, belongs to two 'faces'. These interlocking faces cover the surface of the icosahedron and provide the organization with twenty integrated action plans based on their common understanding. It is possible to accommodate the twenty face meetings in three time blocks at the close of a syntegration. They may then schedule whatever additional time together which they deem to be necessary after the event.

### Next Steps

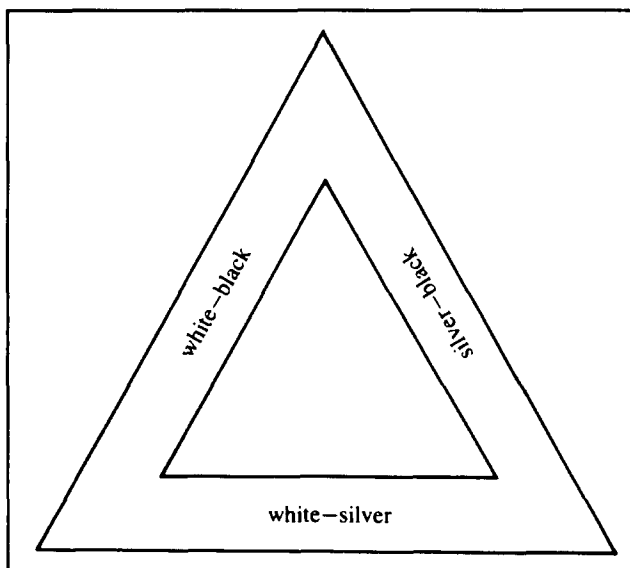
Experiments have been undertaken and are planned using different polyhedra including both regular and non-regular solids. Meetings of twenty-four people have proven to be effective and appear to have much the same sort of outcomes as full syntegrations. The range of convenience of the smaller polyhedra has yet to be established although positive results have been reported from groups of as few as six (the tetrahedron). This is a valuable extension because not all organizations can assemble either thirty people or a block of several days to pursue their objectives.

Electronic syntegrations have been proposed and discussed for several years. (One is now being tested.) This option could be very fruitful, in allowing the participation of people who could not come together for sufficient time or who perhaps could not come together at all. Three basic versions have been suggested: a syntegration which meets face to face for the Problem Jostle and selection of its twelve topics and then moves on-line for the Outcome Resolve; a syntegration that holds its Problem Jostle and selects its twelve topics on-line and then meets face to face for the Outcome Resolve; and the syntegration which takes place entirely via electronic media.

Finally, Stafford Beer as well as many others, has been interested in the effect of cumulative syntegrations where the results of thirty syntegrations could be collapsed and reassembled in a super-icosahedron which would represent, at its culmination, the combined input of nine hundred people. It is an interesting question and will no doubt pose a challenge to the commitment and creativity of its proponents.

### Note

Team Syntegrity International owns world-wide rights to the use and further development of the Team Syntegrity protocol. TSI



**Figure 3 Trinagle with Team Names**

operates through licencing other enterprises to sell and deliver Team Syntegrity technologies. TSI provides certification and training to qualified licencees to market and deliver syntegrations. The Team Syntegrity network, through regional coordination and electronic communications uses the architecture and processes of Team Syntegrity to organize themselves.

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